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MULTIMEDIA





A Mac By Any Other Name? Guess Not

When Apple officially teamed up with the core of all this is Wintel — Microsoft, we thought that we were really shaking the tree.

But now Apple has pulled up roots on that business with the announcement it has no plans to license MacOS 8.0 to adherents of the Common Hardware Reference Platform (CHRP). (For more on the story, see "Apple abandons clone experiment," page 12.) That effectively cuts off seeping clones from taking the fruits of the famous permission of Mac-compatible sales.

Back when Apple finally decided to start licensing its operating system to clones, many observers murmured it was more than a decade too late. But prevailing wisdom said Apple needed that broader support to grow market share for its platform. In March, market research firm Computer Intelligence published figures indicating Mac clone vendors were helping the Mac OS platform take market share from the X86 platform in the U.S. dealer channel.

So, does Apple have a grand master plan, or is this just sour grapes?

As a co-founder of Apple, Steve Jobs was of course pivotal in Apple's early days decision to keep clones off the market. The closed architecture and the accompanying higher Macintosh prices did little to halt the competitive rank of the IBM/Intel/Microsoft players and clones, despite a far-flung advertisement of Apple's technology. Now that Jobs is back at the helm as interim CEO, (Please see "People," page 60.) he was no doubt central in the return to the OS/2-driven fairness mentality. This is a marked contrast to the eventual strategy he pursued at NeXT Computer, where Jobs actually sold off the hardware business, and concentrated on trying to market NeXTStep across hardware platforms.

Stephen Chien, sales manager for Discount Mac Club in Richmond, B.C., said the presence of clones in the Macintosh market has driven down prices and encouraged more shoppers to buy into the Mac option. "People could afford to buy a Mac." He predicts, without clones in the future Macintosh market. "We're not going to see prices as competitive as five years'." However, he said the Macintosh will still have a market among certain buyers although they may complain about higher

prices. Discount Mac Club sells Apple, Power Computing, Unix, and Motorola options. A sister business — Discount Computer Club, sells Intel-compatibles.

Reduced competition in that market (particularly if prices rise, as pundits fear), could easily land any newcomers the Mac market as a whole has achieved back to the Intel-based PCs. Resellers who have loved their businesses on the young Mac clones may soon be scrambling. Some will follow Power Computing's lead and turn to Intel-based sales opportunities. But not all. In September, Macintosh dealer WestWorld Computers Ltd. launched a major B.C. expansion, opening stores in Victoria, Prince George, Vancouver and Kelowna. The 19-year-old business already had stores in Edmonton, Calgary and Red Deer. "We saw an opportunity present itself. Our market is growing," said Stephen Boone, sales manager for WestWorld in Edmonton. "We're there to meet the needs of our specialized users — our graphics, education and business customers."

A recent report by Computer Intelligence says Apple has more brand loyalty than any other computer vendor. The firm reported that four in five Apple Macintosh users who purchased a computer in 1995 bought another Macintosh.

Regarding Apple's decision to not license MacOS 8, Boone said, "Apple has to make sure it's taken care of itself first." In other news, Future Shop will no longer be selling Macintoshes. Dennis Manning, director of corporate communications for Apple Canada, said in September, Apple Canada and Future Shop came to "a mutual agreement to end the business relationship." He cited differing target customers as the main cause, as Future Shop aims at conversions, and Apple is targeting high-end and multimedia customers.

This month, he said to step in at our Lab Test (page 28) for the best of business, laser printers under \$5,000. Also on the peripherals front, don't miss "The Big Printer: A Look At Monitors and Displays For 1996: Is High-Resolution," (page 32).

Meanwhile, we'll watch the pining and plotting over at Apple, to see what fruit it all may yield. Drop us an E-mail with your thoughts, or visit our discussion group, on CCW's Web site, at <http://www.ccw.com> ☐

Grace Casavides

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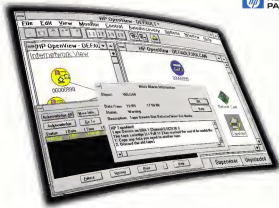
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What were those Pentium Pro limitations?

I did want to ask about a comment in Alan Stern's article entitled "Clone CPUs Challenge Intel At Last" (CCW August, page 57).

I was hoping that you would be able to point me towards a source of information that discusses these limitations. This would be very important and interesting to me as it would assist me in selecting CPUs for my clients. I can cut and sell hardware and software to small businesses and home users.

I always enjoy the information supplied in CCW and especially the honest writing displayed in Mr. Stern's articles. Many articles in other publications in other forms of media report on the computer business but never dare write anything that most suggests there may be an other component on the market as a big existing or some software. While I am sure I do know there are many problems with products. In fact it is these problems that cause me the most headaches. On the other side, it is these problems that help keep me in business.

Paul Cardinault, owner
Apex Computer Services, Mississauga, B.C.

Columnist Alan Stern responds:

The Pentium Pro is a powerful CPU design. Nevertheless, there are several limitations, which were widely discussed.

1. The integration of the Level 2 cache within the same chip as the CPU itself leads to quick access of the cache by the CPU, but results in a large design that requires quite a lot of power, and is expensive to produce. One result has been on Pentium Pro notebooks, another is that Intel/Intel has abandoned the design in favor of putting the CPU and cache on a card, no discrete components on the Pentium II and future products.
2. The Pentium Pro was optimized for running 32-bit code. It is less efficient at running 16-bit code. Because of its speed and power, it does not play very well on 16-bit Windows 3.1 and OS/2 (OS/2M hybrid Windows), but doesn't do as well with those operating environments as other CPU designs (including AMD's K5) running at the same speed.

There are a number of places for the Pentium Pro. In particular, there are motherboard designs that support two four and even more Pentium Pros. For high-end servers requiring multi-processors, it is currently the best choice as the Pentium II lacks the same range of support at that time (and, honestly, is not continuing development of the Pentium Pro). We're seeing it speed up at around 200MHz to 233MHz, while Pentium II designs are already at 200MHz with models going to 400MHz projected for the next year.

Yes to Complex age restrictions!

I since this is a free response to your article in the June 87 issue, The Complex show in January was my first experience and I do believe from that there should be no age limit. There were so many students attending that it was often difficult to talk with salespeople. One rep I spoke with was very open with the vast numbers of no business related questions and particularly students, at the show taking up valuable time. She was very abrupt in dealing with students and I might add rude to them. However, she was simply reacting due to frustration.

Her article mentioned several very brilliant young people who would feel under the age limit. My suggestion: They should contact someone in the computer industry for a special entrance pass.

After Paula, purchasing agent
Data Computers, Port Huron, B.C.
psprad@tel.net

Disclaimer:

The review data included in our recent special report on POS software (CCW September issue, page 46) were of the WinPOS product, data listed by Logic Controls Canada Inc. For more information on the company, see <http://www.logic-ca.com/>.

We welcome your letters on industry issues and concerns, as well as your comments on our magazine.

We reserve the right to edit any contributions for improved clarity. Please write to the Editor on 8 mail at editor@ccw.com or fax: (905) 465-5555.

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The small business sector, including many computer VARs and resellers, has in recent decades become the principal engine of new job creation in Canada. However, many small businesses that would like to take advantage of marketing and selling opportunities via the World Wide Web have been deterred by the cost and complexity of on-line commerce solutions.

On Sept. 9, at the Internet Commerce Expo show in Los Angeles, IBM introduced the Net-Commerce START which is an entry-level version aimed at small businesses with the emphasis on ease of use.

The NetCommerce Smooth-START is aimed at small-to-medium sized enterprises, and the NetCommercePRO is intended for sophisticated, large-scale enterprises.

Also new is the Commerce-POINT Payments family for secure Internet payments. This family of products includes a Commerce-POINT Wallet for storing and controlling electronic payments; the IBM CommercePOINT eTill, an on-line cash register; the IBM CommercePOINT Gateway for processing credit card transactions over the Internet; and the IBM Registry for SLC, to manage encrypted digital transactions.

As well, Cryptologic Live! product is a new Java electronic commerce product that is intended to provide secure transmission and reception of e-commerce activities.

For more information, contact <http://www.ibm.com/Commerce/CP01/NT> or <http://www.cryptologic.ibm.com>

Digital has recalled some AC power adapters

Digital Equipment Corp. has announced a voluntary recall of AC power adapters (the external power supplies that regulate power from an external source to a notebook) for the i486SX VP 500 line of notebook PCs. According to Digital, the recall is to address a potential problem with the connector pins on the adapters, which if broken could pose a hazard

of an electrical shock.

All the affected adapters were sold between September 1996 and August 1997. Free replacement adapters are being sent as quickly as possible to customers qualifying for the recall and exchange. For more information, contact 1-800-380-4341 or visit <http://www.windows.digital.com/electrical/recall1997.asp>

High-tech virtual pets banned in school

(NIA) — Bleeping papers in classrooms around the U.S. were banned at various schools over the past years, but today, new disturbing bleeps are emerging. The latest disruptive classroom bleep comes from Tamaquochi "virtual pets," which are no longer allowed in one California elementary school.

Like most fads, the small egg-shaped devices, beaming highly sexualized bleeps as soon as they began shipping in May of this year. Using an embedded chip, Tamaquochi, or one of its "look-a-liks," will hatch an electronic pet which "bleeps" in a liquid crystal display. Typical of a pet, chores such as feeding, cleaning, affection, health care and attention must be provided by the owner. Tamaquochi has embedded display, modes, randomization and other features but lacks the artificial intelligence to realize it is in school. Officials at Ray Farm Elementary School in Alameda, Calif., announced a ban on Tamaquochi or any electronic pet from the entire school.

A spokesperson for the school said: "Students are going to have to leave their electronic pets at home. They are causing a distraction in the classroom."

The result of banning Tamaquochi manifested in illness and eventual death. Students can play electronic games with Tamaquochi and the goal is to keep Tamaquochi alive as long as possible. Electronic pets are becoming a worldwide epidemic. Reports indicate similar bans were issued in Australia, the Philippines, New Zealand, Hong Kong and other locations.



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Apple Computer abandons
Macintosh clone experiment

Indications are Apple Computer Inc. has called it quits on the cloning front.

Recently Apple's chief financial officer, Fred Anderson, said, "We have no plans at this time to license Mac OS 8 for CHRP (current hardware reference platform), CHRP certification, or future notebook computer technologies."

And this statement was taken in an era of Apple's Macintosh clone experiment. Without a license to use Mac OS 8 on a CHRP-based computer system or without certification of a CHRP-based system, clone makers cannot build and sell systems competitive to the new generation of Macs that Apple plans for next year.

Apple shared this news, after announcing its recent acquisition of Mac clone Power Computing Corp.'s core assets in a deal valued at US\$100 million in Apple common stock. Power Computing will, however, keep its name, and the company has already launched an Intel microprocessor-based family of notebook computers called PowerTig.

Apple and Open Computer Corp. announced a deal that will permit Open to bundle Mac OS 8.0 on existing Mac clones. The agreement expires next July.

Moskowitz Corp. has announced it will exit the Mac clone business, because it has "not been able to reach an acceptable long-term licensing agreement with Apple Computer Inc.," said Moskowitz's vice-president of consumer relations Ed Gans. The company says the decision will result in lower than expected Q3 earnings.

Contact: The Editor

LETTERS

Canadian Computer Wholesaler welcomes your opinions on current issues in the market, plus your feedback on our publication.

NEWS

We welcome your ideas regarding news and related topics for Canadian Computer Wholesaler. Feel free to contact the editor directly with your suggestions.

TEST LABS

We'd like to hear your feedback and suggestions on our Test Lab review section.

HP/Mitsubishi partner for
lightest, thinnest notebooks

Hewlett-Packard has announced a collaboration relationship with Japan's Mitsubishi Electric Corp. to "enable the two companies to combine Mitsubishi's super-thin keyboard battery and LCD display technology and manufacturing strengths with HP's notebook PC system expertise, distribution, and support infrastructure." The announcement was made by HP with the intention of expanding its product line with the thinnest, lightest notebook PCs yet brought to market, says the company.

A preliminary "concept" notebook was demonstrated in order to show the physical nature of the new notebook PC architecture. The new product is intended to weigh 3.1 pounds, be based on the latest low voltage Intel Pentium MMX 386MHz and 233MHz chips, be less than one inch thick, with a 12.1-inch TFT screen. Danny Savard, business development manager for HP Canada's mobile products stated, "HP's collaboration with Mitsubishi is a significant step in our strategy to update growth in the notebook PC market place. We've already made great strides by expanding our product line, and this new relationship will go even further in our efforts to meet the varied needs of today's corporate customers."

If HP can differentiate itself from the competition by launching a radically improved mobile computing platform, it may be able to use the new mix of technology to keep the better established competition, at least temporarily. For more information, contact <http://www.hp.com/canadabook>, <http://www.hp.com/globalbusiness>, or <http://www.hp.com/global/presentation>, or call 1-800-383-3867. ☐

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Informix Canada restructures
Informix Software (Canada) Inc. has announced a restructuring. The restructuring is part of a worldwide plan initiated by its parent, Informix Software, Inc., with a goal "to improve the company's long-term profitability and sustained growth."

Informix's Canadian workforce is being reduced by 18 people, primarily in the areas of management, finance, sales and marketing.

As part of the restructuring, Don Jackson has been named country manager, Informix Software (Canada) Inc. David Oukewitz, past general manager of the Canadian operations, has left the company.

Calgary developer DiscoverWare Inc. — on the go!

Things are zooming along for Calgary's own DiscoverWare Inc. This summer, that developer of interactive multimedia training software announced a private placement of more than three million dollars by Drake (Luxembourg) Sml., — a member of the Drake International group of companies.

As part of the deal, DiscoverWare entered into cross-licensing arrangements with Drake company ComputerPREP of Phoenix. ComputerPREP may distribute DiscoverWare's CD-ROM products under the ComputerPREP private label. And DiscoverWare will distribute ComputerPREP

products and services and use the ComputerPREP Web browser product to manufacture and distribute DiscoverWare products.

Drake now owns 40 per cent of the company. DiscoverWare president Michael Anthony said "This is a significant alliance with only a

world leader. We're very excited because what Drake brings to the table for us in breadth and depth of experience is truly effective on a global basis."

He said DiscoverWare will go beyond educational titles to skills assessment and resource type products for businesses.

In September, DiscoverWare Inc. appointed William Derman as chairman of its board. Derman is CEO of several Drake International companies. He replaces Todd Yousman who has resigned to return to the securities industry, in Ontario.



DiscoverWare president Michael Anthony (left) with William Derman, Drake International chairman, at the board meeting.

Meanwhile, the company has teamed up with Ingram Micro (Canada) Inc. for a promotion called Easy Rider, where VAs get points by selling DiscoverWare products that can be redeemed towards leather jackets, recreation bikes and Harley-Davidson Sportster motorcycles.

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Canadian channel takes to the greens

There's nothing like fresh air, lovely scenery and an emerald golf ball or two as a backdrop for expanding business relationships, so Canadian channel partners are urged to. Indeed the channel has been out in full force, swinging clubs, hitting balls at trees, sand and even on occasion, the greens.

In late August, 142 industry people showed up at Silver Lakes Golf & Country Club in Newmarket, Ont., for the Second Annual Local Area Network Dealers Association (LANDA) Golf Tournament and banquet. LANDA is a non-profit professional association, dedicated to the on-going training of Canadian networking resellers, systems integrators and consultants.

Also this summer, the Canada Chinese Computer Association's Third Annual Golf Tournament drew 140 computer industry and associated professionals to the Sleepy Hollow Golf and Country Club, in Southville, Ont.

Then, 144 Western golfers swing their clubs at the Western Canadian Computer Distributors Society (WCCDS), at the Mayfair Lakes course in Vancouver.

And NEC was big-time, as a major sponsor of this summer's Export-A-Skew Game in Whistler, B.C., where Greg Norman triumphed over Jack Nicklaus, Fred Couples and Nick Faldo.

Meanwhile, as gold weather looms, Canada's computer industry golfers are squeezing in their last few days at the driving range, in preparation for next year's rounds. For?



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EDITOR'S CHOICE OVERALL
AUG 1997

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PC (Oct. 1997) "...scored very well on our objective tests, ranking near the top of the pack with its composite MondMark score." "The unit's geometry, convergence, and uniformity were especially good, as were its text and color handling." "The Visual Sensations VS-9 is a very good performer and a relative bargain."

WINDOWS (Oct. 1996) "KDS's new VSX-7 monitor is a feast for the eyes with its clear, crisp picture and clean, modern design."

MacUser (Dec. 1996) Awarded 4 stars. "Out of a field of 47 17" monitors, only 3 scored a higher monitor rating."

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PC Prices Are SHRINKING;

With More, In Store

by David Rosen



Like some horror-movie elevator ride, PC prices are dramatically plunging out-of-control. You know it and your customers know it. Not only are computers cheap, they're getting cheaper every month. How low can PC prices go? How low should they go?

It seems that the computer is becoming a simple commodity, bought and sold like a tourist of a pair of blue jeans. Most resellers have long recognized the irony of selling better technology at lower prices. Historically, however, falling prices have been offset by steeper increases in consumer demand and, consequently, increased revenues. The problem is this trend appears to be changing.

According to Albert D'Amato, an analyst at Toronto-based Evans Research Corp., demand is up for new machines but supply is up even more, leading to falling prices.

"This year's average selling price of a desktop computer is \$1,833, down over \$200 from last year's price of \$2,033," warns D'Amato. "That represents more than an 11 per cent drop in just one year," he adds. Meanwhile, demand for desktop systems are up only an three per cent from last year's numbers.

While the forecast for desktop systems is rather depressing, some retailers point to the increases in laptop computer sales to buoy their spirits. While it's true that laptop sales are experiencing healthy growth, it's too early to tell if long-term relief can be found in chasing the technology adoption curve. Numerically speaking, sales of laptop systems are up approximately 24 per cent compared with 1996 according to Evans' D'Amato. But prices for laptops are falling as well. "In 1996, the average price of a laptop was \$3,580, now it's about \$3,070."

Up And Down

With Santa Clara, Calif.-based Intel Corp. making another round of chip price cuts for the fall, does that mean that even more price drops are on the way? Not necessarily says Ralph Hyatt, Compug Canada's product marketing manager and the company's point person for product lifecycle management.

"Average selling prices sometimes go up when Intel cuts prices, because customers will decide to buy a higher-end system whose price has just been lowered, rather than take the low-end model," he explains.

Traditional channel vendors such as Compug are also moving to lower prices and trim their overhead expenses. The company recently cut suggested list prices on 30 notebook PCs in its Armada line and four models of its ProSignia 300 server, with reductions ranging from five to 36 per cent. A few months ago, Compug slashed prices on three popular Desktop models, some up to 34 per cent.

What's Going On?

A number of factors combined, are responsible for the price drops, including the fact that the PC is becoming increasingly cheaper to manufacture. Some industry watchers theorize that PC prices will fall below \$1,200 in the next year or so. Meanwhile, as consumers become more comfortable with technology, they are more willing to buy based on price rather than brand name appeal.

The commercial market tends put more emphasis on performance, service and support, so it is less likely to gravitate toward the lowest price machines.

As supply exceeds demand, manufacturers are slashing prices to keep up with direct sellers such as Dell Computer Corp. and Gateway 2000 Inc. A few weeks ago, Dell established a new stand-alone business unit for the consumer market. According to Paul Bell, general manager of Dell's consumer and small-business group, the company's home PC sales in the Americas grew by more than 90 per cent in the most recent quarter. "Consumers already represent about 135.5 billion in annual Dell sales in the United States alone," says Bell. "But we think that's just the beginning."

Perhaps more ominous for consumer-focused resellers is the news that Dell has tripled its marketing budget for the home PC segment from a year ago. Additionally the company has gone on record as saying it would strengthen its customer service and

support offerings, two important advantages of traditional storefront resellers.

Now The Good News

Dell, of course, has no storefront locations so it can't sell to those consumers who want to touch and feel the products before they buy them (a category which includes many first-time consumers). In addition, Dell seems to be targeting more experienced end-user consumers who know their way around a computer. Dell's Web site — especially attractive for experienced computer buyers — generates about US\$32 million in sales every day, according to the company.

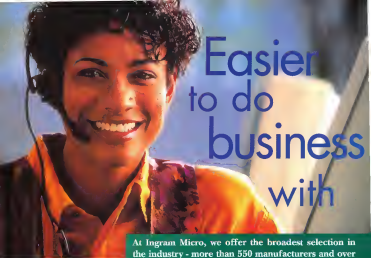
Resellers should take heart, recognizing that most consumer products eventually rack at a certain price point. Remember pocket calculators? After dropping dramatically in price, manufacturers started adding features to stabilize the market. Perhaps at a price level of \$1,200 for bare-bones PCs, computer manufacturers will stop cutting prices? Compug's Hyatt remains sanguine despite the uncertainty. "Smart resellers will survive, and do well, even with the falling prices," he asserts.

Fasten Your Seatbelts

Still, while buyers cheer the dwindling prices, the effect on the industry may be devastating and, in the long run, not likely to be in anyone's best interests. Lower prices and a barely moving market mean that some manufacturers are likely to fail while others will likely become more conservative. Without sufficient profit margins, many manufacturers won't invest in additional research and development. In time, resellers will be forced to turn high sales cost customers and increase margins by even more emphasis on support, service and training.

Summarizing the feeling of most people in the industry, Evans' D'Amato concludes, "the climate is not for a really rocky ride." ■

David Rosen is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at DavidR2@net.com.



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Buyers, Sellers Seek Deals At SoftWorld '97 In Vancouver

by David Tanaka



If you're used to Cannes-style computer technology events, attending SoftWorld would be a bit of culture shock. You won't find multimillion-dollar booths or stacks of the latest and greatest. But what you do find are clusters of people earnestly discussing funding, joint ventures and partnerships.

That's what SoftWorld is about.

Established in 1991 as a bi-annual event, the show now alternates yearly between the east and west coasts, with this year's event back in Vancouver, from Sept. 7-10. The show's slogan describes an array of late software deals made here: The estimated 700 attendees from three dozen countries cover the complete spectrum of software wheeling and dealing, from code cowboys to venture capitalists to government associations.

The Electric Mail Company Inc. is typical of the small developer looking for new opportunities at SoftWorld. The company had some specific goals to achieve at the show, according to Guy Stueves, director of marketing with the Vancouver-based LAN-to-Internet consultancy. "One thing I want to do is make sure I connect with the Canadian consulate," he said, during the show. The company plans to expand into the U.S., and the consulate there would be able to provide regional information about VARs, distributors and other opportunities.

Electric Mail recently announced its AKA service. Armed at distributed companies that might use a different ISP in each regional office, AKA allows the company to create a consistent mail address through an alias, while behind the scenes, the mail is routed to the correct mail server provided by each ISP. To that end, the company is also looking for a LAN gateway software author/developer.

It may seem ironic that a company that specializes in making E-mail more effective would be seeking out face-to-face connections, but Stueves says, "It's the relationship-building that's the key to everything." He says business relationships "can be as vital as possible but it strengthens and expedites the potential of any relationship if you've met

the person eyeball-to-eyeball."

A little-publicized aspect of the software business that smaller developers may want to know about are escrow services. For example, Fort Knox Escrow Services Inc., in Clarkson, Ga., a suburb of Atlanta, offers to physically hold software source code in tamper-proof containers in fireproof vaults—to protect "the heart and soul of the product." That's how Tracy Conlan, international account manager for Fort Knox Escrow, characterized the intellectual property. While this seems like a service for developers, in fact it serves both the developer and the licensee, says Conlan. "We provide it legal agreement which the licensee and the developer sign saying that if certain conditions are met—for example if the developer goes bankrupt—then the source code will be released to the licensee, so that the licensee can continue to support themselves or support that product if need be." In other words, it acts like an insurance policy.

Fort Knox Escrow presently has about 7,000 clients in 37 countries, says Conlan. But she notes: "As software continues to be developed at an exponential rate, I think more people are feeling the need for escrow, and feeling the need to protect their investment or help their licensee protect their investment. It's being proactive about it."

Many of the matches implemented government departments and industry associations. Thayne Stockmann, project manager of the Software Human Resource Council's software development worker pilot project, described the needs her project is trying to meet. "Canadian industry has indicated it is facing a real skills shortage," she says, noting that the technology industry has identified seven job descriptions that they are having a difficult time filling. Among the jobs trying to be filled are embedded systems software designer, software products developer, MIS software designer, multimedia software designer, senior animation effects editor, and software designers for teleconferencing and services.

The council, working with three government departments: Human Resources Development Canada, Industry Canada, and Citizenship and Immigration, is working at streamlining the issuing of work permits "that allow temporary foreign workers to come to

Canada to fill information technology positions, which can't be filled by Canadians."

Stockmann is quick to point out that the project is not intended to bring in competitors to Canada's existing skilled software workers, but to fast-track managers with the skills that are needed but do not exist in the labor pool. "The whole goal behind bringing in temporary foreign workers is to have them train Canadian to increase competitiveness for Canadian industry, and also to increase jobs."

Stockmann says that for every temporary foreign manager a company brings in, it will create three to four new jobs. However, "we're not interested in bringing in a Cobol programmer or a C++ programmer because Canada has a lot of them. We want to see these positions filled by Canadians," she notes.

On the last day of the conference, federal industry minister John Manley delivered a keynote address, and released the final Information Highway Advisory report entitled: *Preparing Canada for a Digital World*. The report summarized the 234 recommendations made during Phase I, along with information on the progress being made. These cover several broad categories of the so-called information highway, including infrastructure, access, Canadian content, economic and employment factors, and education. The report recommends, for example, that a Canadian multimedia fund should be established "to support the development, production, distribution and marketing of Canadian cultural and multimedia products," and that government should provide additional funding to public libraries to support public access sites. SP

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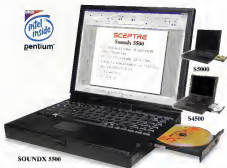
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The Big Picture

A Look At Monitors And Displays For 1998, In High-Resolution

By Jeff Emsw



MAG GUNS



This past year has seen the "Turn-of-Century" continue to change its shape, take on array of new traditional forms, demand by consumer laptops, new forms of networking and connectivity, new end-user needs, and new display technologies.

The result of powerful computing has been expanded by handheld devices such as the PalmPilot and the Windows CE computers, plus limited-function Network Computers (NCs) and Network PCs, along with lavish multimedia home computing systems integrated with home theaters, and true "desktop replacement" notebooks. And all these new permutations of personal information devices have both demanded new display technologies, and benefited from the latest offerings of the display industry. But the traditional 15-inch and 17-inch color monitor categories have remained the mainstay of computer retailers. These traditional monitors have become cheaper and often "smarter" and easier to use. Around the edges of this home display technology, however, a word and wonderful garden of more exotic display options is rapidly sprouting. Large format desktop monitors (17-inch, 19-inch, and larger) are gaining market share; color LCD panels are available in a dizzying spectrum of formats, and huge-format television sets and flat-panel displays are starting to link the computer to the home video market. All of these changes in the computer display market offer new opportunities to creative studios.

The Old Way Is Still The Best Way (for those on a budget)

The more some things change, the more at least a few other things remain the same. In late 1997, there is still a surprisingly healthy demand for 14-inch monochrome cathode ray tube (CRT) display monitors, but it's mainly in utility computing areas such as point of sale and dumb network terminal applications. The plain vanilla 14-inch color SVGA monitor is still remarkably popular in the lower-end, budget-conscious retail, education and business computer market segments, but there isn't much interest in say about that old 14-inch workhorse either. Few manufacturers are putting much effort into improving 14-inch monitors at either the black and white or color variants. Indeed, 14-inch monitors are low-price, low-margin, "no-brainer" items for resellers and end-users alike. But their small size makes them unappealing to end-users with serious graphics, desktop publishing or multimedia needs, where the 14-inch monitor's cramped dimensions and limited pixel resolution rapidly becomes tiring and frustrating, leading many end-users to trade up to larger displays. This can be a loss to resellers — say here PC owner with a 14-inch monitor is a good bet to return to the store eventually, ready to be upsold to a bigger, better monitor.

The 17-inch color CRT desktop monitor is still the most popular choice for the mainstream computer user. It has a sufficiently large viewable area to display a spreadsheet, game Web page or a letter-size document page for comfortable viewing. Manufacturers such as NEC, Viewsonic and Seagate are still investing considerable research and development efforts into improving such features as easy to use controls, on-screen displays, and maximum brightness, brightness and viewable area.

But Bigger Is Better
One of the monitor categories that has seen the greatest growth in 1997 has been in the over 15-inch desktop monitor segment. The 17-inch monitor has come down in price to well below \$1,000 in many cases, making it an affordable choice for a much larger number of computer users. As the spread of computers into the hands of new users has slowed in recent years, an increasing number of PC and monitor sales are to second- or third-time buyers.

These buyers, after years of computer using experience, are often willing to invest a little more money to get increased comfort

and quality. According to NEC, the average monitor outlives two to three of the desktop PCs beneath it. Experienced end-users know that the choice of monitor is an important long-term decision. This gives resellers a good business case to make in support of a good quality, large-format monitor — it's a good investment. Large format monitors also, in spite of falling prices generally offer a better margin to resellers.



Recent Asia

One of the most exciting new kids on the monitor block is the 19-inch format monitor. With a desktop footprint very close to that of a 17-inch monitor, 19-inch monitors offer a much larger viewable area than 17 inches, at a much lower cost than 21-inch monitors. Over 19 inches, prices will haven't been reduced enough to allow a big increase in sales. Very large monitors generally only make sense to end-users in part of a high-end professional computing solution—typically a workstation or "workstation-class" PC used for jobs such as engineering, simulation, or CAD. The key to up-selling monitor users is to connect the benefits of a larger monitor to the user's past experiences and current needs.

Features And Benefits Of Current Monitors

Until a couple of years ago, features such as Energy Star power saving, MP3, low energy emissions, decent anti-glare coatings, and com-

prehensive, easy-to-use controls were sufficiently rare to be rare special mention. Now, however, there are few viable monitors that don't have these features. The most selling points now are the size of the dot pitch, the quality of the CRT (the Sony Trinitron tube is still the king, though both NEC and Toshiba have high quality competitors), the range of frequency range and screen resolution.

A monitor's frequency range determines the content level for the user, and the detail of image that can be displayed. The horizontal frequencies of monitors can range from 13.15KHz (NTSC television frequency) to about 100KHz. Most computer monitors support a horizontal range from about 30KHz to

60KHz. A new trend in mainstream monitors is to extend the horizontal frequency range down to 13.75KHz, to make them compatible with composite NTSC signals. Especially with large format TVC computer monitors, this eases the integration of computer with television.

The vertical frequency range of most monitors is from about 40Hz to 120Hz. A 60Hz display is likely to be very shaky and uncomfortable to view for long periods. The most variable, such solid display is 90Hz or above. Most current graphics cards will output signals ranging from about 40Hz to 150Hz, and picture resolutions ranging from 320 by 200 pixels to 1,280 by 1,024, or sometimes, 1,600 by 1,280 pixels. In general, the higher the resolution supported at the highest vertical frequency, the better the image quality of the monitor.

Most monitor makers offer a range of quality in each size category. The best quality (and the most expensive) monitors have Sony Trinitron tubes or comparable tubes from Hitachi or NEC. 26-mm or better dot pitch or equivalent, furnish on-screen controls for adjusting the picture, and sometimes extra features such as professional graphics and color matching, and separate BNC connectors for each color component. Further down the food chain, monitors with coarser, larger CRT dot pitches (generally 26 mm or larger, lower control options, and lower overall crispness and brightness offer a decent quality for a low price.

For example, the Daptek DT-1310 has 26-mm dot pitch, and a maximum resolution of 1,280 by 1,024 at 60Hz, for a street price of around \$640.

The AcerView 79a 17-inch is a high resolution (1,280 by 1,024 at 75Hz), with a 26-mm dot pitch) representative of the line, that sells for about an \$850 street price.

Viewsonic's new PT15 17-inch monitor (16-inch viewable) has a 23-mm dot pitch, and maximum 1,600 by 1,280 resolution at 60Hz, and 1,280 by 1,024 at 85Hz, plus a mono-driven OnView control set, for a MSRP of \$1,139.



NEC monitor.com

The LCO Revolution

Perhaps the biggest change in the monitor market has been outside the traditional CRT monitor sector. Biggie, cheaper liquid crystal displays have helped allow notebook PCs to become a real competitor for traditional desktop

Sceptre Pushes Displays, Canada

On Sept. 11, at the Metro Toronto Zoo, Sceptre Technologies Inc. unveiled its latest display products to the Canadian market, and also signalled its intention to become an active corporate citizen in this country. Sceptre's corporate mission Begins — a colorful Monitor Lizard, helped sponsor the Komodo Dragon and White Alligator exhibits at the zoo. The Komodo Dragon is the world's biggest Monitor Lizard, and according to Sceptre representatives, Sceptre is aiming at becoming Canada's biggest computer monitor vendor. Current industry figures indicate that is little over a year. Sceptre has vaulted into the top five of monitor vendors in Canada, and may even rank as high as number three, after Dell and Samsung.

Sceptre's president and CEO Stephen Lee, and Canadian distribution manager Richard Gillespie were



Stephen Lee, Sceptre's president and CEO, and Richard Gillespie, Canadian distribution manager.

on hand to announce Sceptre's involvement with the Metro Toronto Zoo as a symbol both of the company's commitment to environmental causes, and to its desire to put down community roots in Canada. According to Lee, "Sceptre is working to increase its Canadian involvement," and is "now really a part of Canada."

In conversation with CCFW, Lee went on to say that Sceptre, which has been making computers since 1984, and notebook PCs since 1989, is particularly interested in bringing the LCD monitor into the mainstream. "Last year (1996), the market for LCD panels was solid," he explained. "The market did not want to pay thousands of dollars for 10-inch or 12-inch LCD panels."

computers and their CRT monitors. As well, advances in LCDs have also allowed displays to be integrated with a wide range of computer and audio visual equipment, ranging from notebook PCs to handheld PCs, to video projection devices, to digital cameras and digital video cameras.

As major suppliers such as Hitachi and Sharp have refined their manufacturing technology with billions of dollars worth of investments in recent years, the cost of color LCD screens has plummeted, while the size and resolution of screens has improved.

Many monitors are finding that notebook users often no longer need a desktop monitor to attach to their mobile PC while at the office. The 13.3-inch screens on today's top-of-the-line notebooks have nearly the same viewable area as a 15-inch CRT monitor. This represents the loss of some CRT monitor sales, but the higher cost of top-of-the-line notebooks can more than make up for this.

LCD Screens On The Desktop

An increasing number of LCD screens are being marketed in frames for use with desktop PCs. Their main selling feature, aside from looking cool, is that they take up less room on the

desktop, weigh less, and can be left running without degrading a power tube. However, desktop LCD screens are far more expensive than a CRT monitor; they have a limited diagonal viewing angle, and users complain that the picture quality, particularly brightness and color accuracy, is generally lower than the best quality Thomson CRTs. Nevertheless, some manufacturers such as Sceptre have made a splash with their elegant-looking LCD desktop monitors, and look forward to increasing sales as prices decline.

According to an NPD study, once LCD screens get within a 50 per cent price differ-

ential to CRT monitors, up to a quarter of PC users claim they will buy them. In the meantime, sales of LCD monitors will continue to expand, attracting more window shopping activity than sales.

When Small Is Beautiful: Tiny Screens Everywhere

The tiny but brilliant and detailed screen of Kodak's Libretto computer shows an incredible amount of detail in the Windows display of that handheld PC sized powerhouse, and points the way for color LCDs to become normal for all kinds of handheld computers. The same path currently is in the notebook market, however, seems to be to build notebooks with full-sized screens and keyboards, while reducing weight and thickness. Sharp, in particular, has largely explained its re-entry into the North American notebook market in terms of its expertise

in building LCD screens,

and its new line of notebooks combine compactness with large, bright screens.

Handheld PCs, such as the Fujitsu Stylus, also display the Windows user interface on small format LCDs, with touch screen capability.

A more subtle trend is to integrate tiny color LCDs into all kinds of digital devices. The Kodak LC120 high resolution digital camera, for example, has an excellent preview screen to allow users to check the basic composition and lighting of pictures before transferring them to a computer. The inarguable small format LCD screen is likely to keep expanding in the handheld PC market.

Set-Top Boxes, Surfing From The Sofa, And Other New Waves

After 15 years of computer monitors evolving away from microwave's 15.758kHz frequency (to escape from the jitters, Harry quipped at least on a TV monitor), a variety of factors are driving monitor makers to offer more big, TV frequency compatible monitors that can connect to various kinds of computer and consumer video devices. This re-emerging of computers and TVs is being driven by many factors: the desire of families to have large-format displays for gaming and



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Fujitsu Libretto



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The advent of 15-inch LCD panels has evoked much greater practical interest, and the only task remaining is to drive down prices.

"We have invested very large amounts of money in bringing the price for LCD panels down to affordable levels, and ensure plug and play compatibility for all kinds of graphics chipsets," he said.

Lee also stated that Sceptre is committed to driving the cost of 15-inch LCD monitors down.

He said future models of LCD monitor will likely have the capability to display either computer or NTSC television signals.

Lee also commented that as concerns for environmental friendliness and healthier computing increases, the LCD monitor, with its zero radiation emission level, lower energy consumption, and less wiring, flicker-free display, will become the preferred desktop monitor for discriminating PC users.

And although traditional CRT monitors will retain their position as the choice for most Sceptre customers, LCD monitor sales will take off in 1998, he predicts.

Richard Gallegos, who has shepherded the Sceptre line to its current level of sales in Canada, claimed that an industry-wide price drop in LCD monitors could be expected in Q3 of 1998.

Sceptre has decided to jump the gun on the rest of the industry, however, by dropping the price of the PT15 LCD monitor from a street price of US\$2,995 to US\$2,195. He claimed that Sceptre sales through MultiMicro/Harco doubled between June and September. Gallegos also claimed that the new PT5A 17-inch CRT monitor, which has won awards since its first appearance a few months ago, demonstrates Sceptre's attention to avoid becoming just another commodity monitor supplier. "We want to establish a brand name for quality, a reputation that customers can trust. We'll offer good value without simply competing on price."



Arcade Time Monitor

displaying business or educational presentations and videoconferencing on large format TV sets.

The new line of Arcade monitors from Princeton Graphics is a recent example of display technology that combines television and computer compatibility in 28-inch or 31-inch CRTs, for use in the home or corporate presentation room.

The Monochrome Ghetto

Aside from the remaining markets for monochrome dumb terminals and the like, there is still a relatively large class of computing devices that use monochrome or grayscale displays. They are mostly handheld gadgets such as the 3Com Palm Pilot, the Windows CE devices from makers such as LG Electronics, Compaq, NEC and Philips, the Newton MessagePad 2000, the PDA-5 and a variety of other electronic organizers.

Aside from cost, the main factor keeping handheld computer displays colorless is power consumption: either color LCDs will have to be made requiring less energy, or battery technology will have to improve. The one really sophisticated new monochrome device to hit the market in 1997 was the Apple E-Mate 1000, a near-notebook device which uses Newton technology to offer students a cost-effective alternative to a full-fledged notebook PC.

However, Windows CE version 2.0, already in the hands of hardware vendors, promises support for color screens. NEC, for example is gearing up to ship a color Windows CE handheld.

Projectors, Pixelboards and Jumbotrons

CRT and LCD screens are not the only display technologies for viewing computer data. LCD technology is widely used in LCD projectors, devices which can project the graphics output of a computer video card, or a feed from a

VCR or camera, onto a screen or a suitable wall. There are a variety of vendors of LCD projectors, including Sharp, NEC and Epson.

Computer-driven pixelboards are an example of a fairly simple technology that is proven to be effective as a public information and advertising aid.

Customized video displays, such as jumbo colored displays in public places, video walls and very large non-portable LCD projections, are usually the province of specialized A/V resellers and VALLs.



Parade LCD Monitor

Beware The Droid Factor

Resellers should be aware that the amount of press coverage a display technology receives is not always proportional to its salability today. The so-called "droid factor," or "gro-wire" quotient of a really sexy new technology like 40-inch plasma screens for hanging on a wall is in inverse proportion to its significance in the market.

Large-sized LCD desktop monitors and plasma screens will gradually come down in price, but for the time being, they are more a technology demonstration than a money-making opportunity. Give them a few years' thought, and who knows?

Displaying The Future

It seems likely that there won't be any absolute winner in terms of display size or type. End-users have a wide range of needs, including degree of portability and cost. There may someday be a market for credit cards with LCD screens as their public phones

may include videophone screens within the next decade. More homes will have large TV sets connected to the Web, or satellite Direct-To-Home dishes and DVD players. There may even be display systems that project 3D images directly to the interior of the viewer's eyeball.

For now, though, the transition to 17-inch and 19-inch monitors, and the high market demand for 13-inch notebook screens seem to offer the best prospects for sales and profits in 1998. ■

Jeff Evans is Associate Editor of Canadian Computer Magazine. He can be reached at jeff@tsp.com



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Business Printers

Monochrome Lasers

Networkable lasers are producing larger volumes and higher resolution, for less money. But, don't forget the consumables.

By Jeff Wood, Tim Baggins-Wright and Steve Hahnke

All's well that ends well?

That's assuming one is content with the printer that's on the end of a desktop or at the end of a network, of course.

But, laser printers now deliver impressive output for just pennies a page. However, when selling a new printer, first think about what it must print. If it's mostly text with minor logos and graphics, then a monochrome laser printer is suitable. Will your customers be doing color presentations? Consider a color laser. If that's too rich for their budget, a high-quality, low-cost, ink-jet printer may do.

Choosing the right printer means striking a balance between creative impulses and the more practical tasks we all have to wade through. And the purchase price may be only a fraction of the revenues a printer may bring you overall.

In The Black

For your environment, although it's a cliché (but with good reason) — you get what you pay for. If cost-per-page (which includes ink and paper) is high, the printer will be purchased many times over. Color laser printers, however, are still a bit pricey and their cost per page is higher since users need to buy toner color cartridges and special paper. A color laser should only be required for various color needs or sharing a color printer over a network. This explains why most companies are content with their monochrome laser workhorses. A monochrome laser printer designed for small- to medium-sized workgroups is the average choice, and a wise one. Heavy use of a light-duty printer can end up costing the buyer more in the long run.

On a positive note, don't be surprised to see high-end ink-jet become network workhorses, and monochrome printers will step up to 1,200-dpi resolution. Watch for prices on color laser printers to drop — by up to 50 per cent.

But you can brighten up your customers' world with the latest color printers.

Who ever buys a black-and-white device now? Only if you are a collector and keep around in antique. You may want to remind your customers of this when they're shopping for a new printer. If they're eyeing the rock-bottom price tags advertising most monochrome laser printers, they may be wasting their time.

Going with color does open up new possibilities. Your customer creates a crisp business presentation from scratch, prints it on transparencies, all the right before. (On the home front, could the kids raise their GPA, an entire point with eye-catching term papers?)

A new color printer is also the perfect companion for a snapshot scanner, a digital camera, or the photo-storage CDs you can get from professional film developers. Color looks great, no doubt. But you'll still need sharp monochrome printing for letters, forms, and other projects that have well-defined black text, but without accents or badly blurred edges.

Memory And Speed

The amount of RAM is a printer very much

depends on the task. Documents of up to 10 pages can easily be printed on a printer with a minimum of 1MB of RAM. As a rule, 512KB (on up to 2MB) of RAM is typical for a desktop laser, while 1MB or so is adequate for a color ink-jet. For network printers, a minimum of 2MB is standard. Although it depends on the network environment, the printer in an graphics department should have no less than 34MB of RAM and office environments should have 12MB of RAM. Furthermore, the higher the resolution of a printer the sharper is the text and images, and 600 dpi is standard. In desktop lasers, engine speeds range from eight pages per minute (ppm) to 12 ppm. For network use, look for monochrome models that can do 12 ppm. As a rule of thumb, the higher the resolution, the more RAM is needed and the higher the RAM, the faster the output.

Our Tests

We asked various manufacturers to send us monochrome laser printers with speeds ranging from 12 ppm to 16 ppm that are networkable, either out of the box or via an optional network interface card. We also stated that the printers should be priced under \$3,000 if at all possible. In the end, we ended up with a very good mix of various monochrome machines, each with certain qualities that would make it a great addition to any small or medium-sized office. We compared print speeds, output quality, and ease of setting up the jets right out of the box.



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Fujitsu PrintPartner 14ADV

Suggested Street Price: \$1,850

Street Price: \$1,295

Reseller Authorization Requirements: None

Marketing Support For Reseller:

- Reseller referrals
- Toll-free tie-in to resellers
- National advertising
- Incentive programs

Maintenance And Technical Relationship With Reseller:

- One-and-a-half-year warranty includes parts and labor (Authorized Service Agents only)
- Toll-free tech support
- Dedicated technical RRS

Web site includes technical information and drivers

Free technical training for Authorized Service Agents

Volume Discounts: No

On-site User Availability:

On loan for evaluation purposes only. Shipped directly by Fujitsu Canada.

Format: printers/drivers on

Fujitsu's View Of The Market:

"The product market is quite wide and includes everything from the SOHO environment needing a high-volume business printer, to a network/workgroup printer in a small to large corporation. The market typically requires more flexibility and features than lower end laser printers," says Gord Tasse, marketing manager of print products at Fujitsu. "Versatile paper handling capabilities, along with PCL and PostScript printing, are becoming basic

requirements for the market segment. Desktop printing is a growing trend in larger size businesses."

System Strengths:

"Impressive features include a 40MHz processor, standard 11MB of memory, a 15,000 pages/month duty cycle as well as low running costs. In addition the PrintPartner 14ADV's paper handling includes two standard automatic paper feeders and the printer can easily be expanded to do duplex printing," says Tom

Editors' Note:

Fujitsu's novel design is the PrintPartner 14ADV. It packs in a lot of great features for a very reasonable price. Under the hood is a SPARC Lite RISC processor operating at 40MHz. This will help process the documents and get them out onto paper with very little delay. It's classified as a 1,300 dpi-class printer, with a maximum output resolution of 600 by 2,400. Print speeds go as high as 14 ppm when printing on standard 8.5 by 11 inch paper. The standard options on this unit include 11MB of RAM, a parallel interface and a total paper capacity of 650 sheets. The RAM is easily expandable to 47MB in total using industry standard 72-pin SDRAM. A duplexing option for this printer is listed at \$495 from Fujitsu. Customers who buy this printer before Dec. 31 are eligible to purchase a coupon for \$50, which would entitle them to two more cartridges. These normally have a suggested retail price of \$145 each, making this offer a great bargain. The price makes this printer one of the least expensive printing solutions in this entire survey.



Hewlett-Packard LaserJet 5M

HP Price: \$2,351

Reseller Authorization Requirements:

Must be an Advanced Solutions Provider

Marketing Support For Reseller:

- Co-op advertising
- Marketing funds
- Reseller referrals
- Toll-free tie-in to resellers
- Pop displays (for the HP LaserJet 5, not the 5N or 5M)
- National advertising

Maintenance And Technical Relationship With Reseller:

- Warranty is for one year, and includes parts and labor
- There is an optional three-year extended warranty
- Reseller can offer service
- Toll-free tech support
- Dedicated technical RRS

Web site includes dealer-specific space, and drivers

On-site User Availability: Available on request.

HP's View Of The Market:

"It is designed for any network for general office use in medium to large companies. The HP LaserJet 5 advances the art of business printing. It's built on the proven performance of the HP LaserJet 4 Plus printer with improvements that make printing easier and more productive," says Catherine Morgan, corporate hard-

copy product manager at Hewlett-Packard.

System Strengths:

Morgan cited three application areas and complex printing, ease of use and expandability, seamless printer sharing and robust printer management for Macintosh, PC or mixed office environments.

Editors' Note:

The LaserJet 5M from HP is a good example of HP's commitment to quality printers. Powered by an Intel 660MF processor at 33MHz, this unit is rated at 12 ppm and comes standard with 6MB of memory, further expandable to 32MB. Maximum output resolution is a standard 600 by 600 dpi, which turned out very crisp output in both text and graphics. The 5M features a 250-sheet paper tray in standard, plus an additional 100-sheet/10-envelope tray for a total capacity of 350 sheets out of the box. Interfaces are provided for parallel, serial, modular I/O, Ethernet and AppleTalk. Options for the 5M include a duplexing unit, a 75-envelope power feeder, and a third paper tray with a 500-sheet capacity. There is also an option for optional wireless communications, as well as flash memory storage. Toner cartridges are good for about 8,000 pages, and the printer's monthly duty cycle is rated at 15,000 pages.



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Okidata OKIPAGE 16n**Suggested Retail Price:** \$1,599**Street Price:** \$1,399**Reseller Price:** \$1,139**Reseller Authorization Requirements:**
Required to participate in reseller programs**Marketing Support For Resellers:**Co-op advertising
Reseller referrals
POP displays**Maintenance And Technical Relationship With Resellers:**One-year on-site warranty includes parts and labor
Reseller can offer service
Toll-free tech support
Dedicated technical MIS
Web site includes technical data, and dealer-specific specs.
There is a five-year limited print-head warranty.**Xerox Accent-a-Writer 8200****Estimated Street Price:** US\$3,499**Reseller Price:** US\$3,499**Reseller Authorization Requirements:**

This is based on location, the number of years in the industry, the types of markets served, the number of employees, and volume/revenue.

Marketing Support For Resellers:Co-op advertising
Reseller referrals
POP displays**Maintenance And Technical Relationship With Resellers:**One-year warranty is return to factory — parts and labor
Toll-free tech support and dedicated technical MIS
Web site includes technical information, manuals and drivers**Volume Discounts:** Yes**Demo Unit Availability And Restrictions:**

One per type, every six months, with special price consideration

Xerox DocuPrint 4312**Suggested Retail Price:**

4512 Base — \$1,795

4512 Network — \$2,265

Marketing Support For Resellers:Co-op advertising
Reseller referrals**Maintenance And Technical Relationship With Resellers:**One-year on-site warranty includes parts and labor
Toll-free tech support and dedicated technical MIS
Web site includes technical information and drivers**Demo Unit Availability And Restrictions:**

Units are available through the Premier Reseller Program

E-mail: ask-xerox@xerox.com**Editor's Note:**

The new Xerox 4312 offers an excellent mix of performance and

Volume Discounts: No**Demo Unit Availability:** Must be an authorized dealer. Demo units are based on availability and limited to 30 days.**E-mail:** xeroxusa@xerox.com**Editor's Notes:**

With a maximum speed of 36 ppm and 600 by 600 dpi printing, this printer offers a good balance of features at a very attractive price. Standard options out of the box include 2MB of RAM, a parallel interface and a total paper capacity of 600 sheets. The RAM can be expanded to a total of 66MB with 32-pin SMMs available everywhere, and optional interfaces are available for Ethernet, Token Ring and AppleTalk networks. The OKIPAGE 16n has a monthly duty cycle rating of 34,000 pages, making a very well suited for small to medium-sized offices.

**E-mail:** canadaxerox@xerox.com**Xerox's View Of The Market:**

Its high-resolution output, extensive paper handling capabilities, fast processing, and zero platform flexibility make it perfect for anyone in a desktop publishing environment, says Xerox.

Editor's Notes:

The Accent-a-Writer 8200 features a 13MHz AMD 38630 processor with print speeds up to 16 ppm. Standard RAM configuration is 12MB, with a maximum capacity of 64MB. At 1,200 by 1,200 dpi, this printer can produce incredibly sharp text and graphics with great use of gray tones. Standard paper capacity is a 250-sheet input tray plus an additional 100-sheet feeder, for a total of 350 sheets. An optional 250-sheet additional tray is also available. Standard interfaces on this unit include parallel, serial, and AppleTalk connectors which are capable of being accessed simultaneously. An optional Ethernet interface is also available for high-speed network connectivity. One of the most attractive features about this unit is its ability to print on oversized media up to an impressive 12 inches by 25 inches.

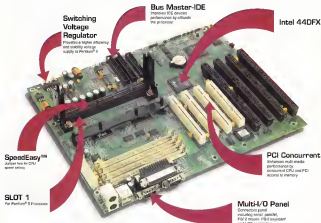
competitive pricing. This 12-ppm printer is powered by an AMD 28240 processor running at 20MHz, and is equipped with a standard 4MB of RAM upgradeable to 32MB. A parallel interface is standard, with optional support for Ethernet, Token Ring and AppleTalk networking. The 4312 comes standard with two 250-sheet paper trays. An optional high-capacity paper tray is available which can hold a whopping 1,000 sheets.

Another impressive feature on this machine is its built-in duplicating unit at no extra cost. The unit takes up considerably less desktop space than other machines in its class. The monthly duty cycle is up to 35,000 pages.



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Brother HL-1660**Suggested Retail Price:** \$1,299.99**Street Price:** \$1,299**Retailer Price:** \$1,325**Marketing Support For Retailers:**

Co-op advertising
Retailer referrals
POP displays
National advertising

Maintenance And Technical Relationship With Retailers:

One-year warranty includes parts and labor
Optional on-site warranty
Toll-free tech support
Dedicated technical BBS
Web site includes technical information and drivers

Volume Discounts: Yes**Drive-Through Availability:** One per location per six-month period**E-mail For Channel Use:** csupport@brother.ca**E-mail For Public Use:** csupport@brother.ca**Brother's View Of The Market:**

"This is an extremely cost-effective alternative to HP and Lexmark. The HL1660 exceeds industry standards in virtually every specification. It's easily networkable via the Brother NC1200 HHD card," says Dan Courville, of Brother.

System Strengths:

Courville points to PCL5c and PostScript Level 2 as standard

equipment, with 17 ppm, 4MB memory expandable to 64MB via standard SDRAM, and a 650-sheet capacity, that's expandable to 1,150 sheets, plus an optional 300-sheet lower cassette.

Editors' Notes:

The HL 1660 from Brother is among the newest in the line, and offers a good mix of standard features and several expansion options. It's powered by a MIPS R3000 processor which runs at 20MHz, and is rated at 17 ppm on letter-size paper, with a maximum output resolution of 1,200 by 600 dpi. The standard RAM complement is 4MB, which is further expandable to an impressive 64MB in total using standard 72-pin SDRAMs. Standard interface options include a parallel port, as well as serial and modular I/O ports. Optional interfaces are available for Ethernet, Token Ring and AppleTalk networks. The NC-1200 network card from Brother has an estimated street price of \$439 and offers 10Base-T Ethernet connectivity. Other options on this model include a lower cassette which holds an additional 300 sheets, and has a suggested retail price of \$389. A duplicating unit is available for a suggested list price of \$999, known as the DX-1600. Flash memory and HDD cards can also be added to save anything from minutes to hours to printer data. Toner cartridge life is rated for 6,000 pages on this and with a typical 5 per cent page coverage. This is a great printer overall.

**Lexmark Optra S1650****Suggested Retail Price:** \$1,260**Estimated Street Price:** \$1,375**Editors' Notes:**

Lexmark has recently launched a new line of printers, one of which is the Optra S1650. This machine without a doubt, offers excellent performance at a very competitive price. It boasts the fastest processor in this entire survey, an Intel P6603 operating at 66MHz. Lexmark printers are best-known for their incredibly sharp output at near 1,200 by 1,200 dpi, and the S1650 is no exception.

This unit is rated at 16 ppm, and comes standard with 4MB of RAM which is expandable to a whopping 132MB using standard 72-pin SDRAM modules. Standard interfaces—on of the best, include both parallel and serial, with options available for Ethernet, Token

Ring and AppleTalk.

There is a 120-sheet standard input tray, plus an additional multi-purpose feeder capable of holding an additional 100 sheets for a total of 220 sheets. The menu system is the printer's control panel is easy to use, and offers a vast number of setup options. Toner cartridges for the S1650 are rated at 7,500 sheets, while the printer has a very impressive monthly duty cycle of 65,000 pages.

If your client's office needs a no-nonsense printer that is both capable and affordable, the Optra S1650 is an excellent choice.

**QMS 2060 WX****Suggested Retail Price:** \$2,799**Editors' Notes:**

Known for making high performance printers, QMS has submitted its model 2060 WX. This printer features an Intel i960SA processor operating at 166MHz, and offers speeds of 20 ppm at 600 by 600 dpi.

Standard RAM complement is 8MB and can be expanded to a total of 32MB. The 2060 WX has both a parallel and Ethernet interface as standard (and making network connectivity a breeze). There is a total storage capacity of 600 sheets through the use of

a 120-sheet standard tray and a 120-sheet multi-purpose tray.

A duplicating option is also available for double-sided printing, as well as an additional 300 sheet paper tray. On the consumable side of things, the toner cartridge is rated for an impressive 10,000 sheets and the monthly duty cycle on this unit is equal to impressive at 50,000 pages. The 2060 WX comes with a one-year on-site warranty.





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Monochrome Lasers



Brother
HL-1650

Fujitsu
PrintPartner 14ADY

OCT 97

Hewlett-Packard
LaserJet 5M

Lexmark
Optix S1950

OCT 97

Processor

HP/PS 63000

SPARC Lite RISC

Intel 486UF

Intel 486UD

30MHz

40MHz

33MHz

40MHz

Max Resolution (dpi)

1,200 by 600

600 by 600

600 by 600

1,200 by 1,200

Max Speed (ppm)

17

14

12

16

Memory (std/mid)

4MB/8MB

11MB/32MB

2MB/32MB

4MB/32MB

Uses Standard SIMMs

Yes

Yes

Yes

Yes

Interfaces (standard)

Parallel, Serial,

Modem I/O

Parallel

Parallel, Serial, AppleTalk

Modem I/O, Ethernet

Parallel, Serial

Interfaces (optional)

Ethernet, Token Ring,

AppleTalk

Serial, Ethernet,

AppleTalk

Infrared, Wireless

Ethernet, AppleTalk,

Token Ring

Resident Fonts

87

81

45

152

Standard Paper Capacity

600

600

300

350

Supported Paper Sizes

A4, A5, A6, B5, B6,

C5, DL, COM 10, Legal,

Letter, Executive, Monarch

A4, A5, Legal, Letter,

Executive

A4, A5, Letter, Legal,

Executive

A4, A5, Legal, JIS,

Letter, Executive

Cartridge Life (pages)

5,000

5,000

6,000

7,500

Drum Life

5,000

30,000

5,000

7,500

Duty cycle (pages/month)

35,000

35,000

35,000

65,000

Suggested Retail Price

\$1,999.99

\$1,999

\$2,791

\$2,200

Estimated Street Price

\$1,599.99

\$1,399

\$1,575

Reseller Price

\$1,399

Warranty

1 year

18 months

1 year

1 year

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www.brother.com

www.fujitsu.ca

www.hp.com

www.lexmark.com

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1-800-362-3967

1-800-359-5826



Okidata	QMS	Xerox	Xerox	OCT 87
OKIPAGE 16n	2000 WX	Accel-a-Writer 8200	DataPrint 4512	
RISC	Intel 486SA	AMD 29000	AMD 29248	
	18MHz	33MHz	33MHz	
800 by 600	600 by 600	1,200 by 1,200	600 by 600	
16	24	16	32	
2MB/64MB	4MB/32MB	12MB/64MB	4MB/32MB	
Yes	Yes		Yes	
Parallel	Parallel, Ethernet	Parallel, Serial, AppleTalk	Parallel	
Ethernet, AppleTalk		Ethernet	Ethernet, AppleTalk	
Token Ring			Token Ring	
48			70	
600	400	350	500	
A4, A5, A6, B5	A3, A4, A5, B4, B5	A3, A4, A5, B4, B5	A4, A5, Folio,	
Letter, Legal	Letter, Legal, Ledger	Letter, Legal, Ledger	Letter, Legal	
Executive	13"x19"	12"x25"	Executive	
5,000	10,000	7,500	10,000	
30,000	30,000	7,500	15,000	
34,000	60,000		25,000	
\$1,536	\$2,759		\$1,236	
\$1,389		US\$2,495		
\$1,150		US\$2,315		
1 year	1 year	1 year	1 year	
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Editors' Choice

Performance

The performance award this month goes to the *Lexmark Optra 5160*. This machine is superb, no matter how you look at it. Everything from its 660MD processor to its 1,200 by 1,200 dpi resolution to its total RAM capacity makes this machine well-suited for any medium-sized office.

Price/Performance

This award goes to the *PagePro Performance 4400*. It offers a unique resolution of 600 by 2,400 dpi which puts it into a 1,200 dpi-class printer, comes standard with 16MB of RAM, and has a print speed of 14 ppm. All this for only \$1,395 (estimated street price). With the 18-month warranty, this printer is an attractive option for any office.

Overall

The award for best overall printer this month goes to the *Xerox DataPrint 4512*. It has an excellent balance of features such as its standard paper capacity of 500 sheets and a built-in duplexing option, not to mention its very attractive look and overall compact design. ¹⁰

Steve Nakada, Tim Roughton-Hicks, and Ann Shoon are CCF's Lab Test Editors. They can be reached at (714) 312-5164.

Taiwan's Acer — Holding Its Own; Among The Heavyweights

by Greg Wherhaght

One of the world's Top 10 personal computer companies recorded revenues last year of US\$6 billion, and comes from one of the fastest nations in the world.

Indeed, Taiwan's Acer Group makes almost every kind of PC one can imagine — along with printers, scanners, mobile telephones, CD-ROM drives, computer memory and pretty well anything else that might be used with a PC.

But this has been no overnight success story. Originally founded in June of 1976 as Multitech International Corp., the company has gone from being a fairly anonymous "clone-maker" to a worldwide powerhouse. Acer not only sells millions of PCs under its own name brand, but also has a successful business making PCs for other leading computer companies under OEM (original equipment manufacturer) agreements.



Shih

Unique, In Asia

Acer claims the title of the only non-Japanese Asian company among the world's Top 10 PC manufacturers, despite the success of PC companies from the other

"Asian tiger" economies.

Much of this success can be traced to the drive of Acer chairman, CEO and co-founder Stan Shih.

In his own country, Shih is listed as "the Bill Gates of Taiwan" and has been honored by the *Ways of Business* and *Fortune* magazines for his achievements. He has also served as advisor to the Republic of China's presidential office on technology issues and head of the country's National Information Infrastructure advisory board. He is now well-known, however, for cleverly creating a vast worldwide manufacturing base for Acer with facilities in no less than 23 locations

worldwide — including Sweden, Mexico, the Philippines and even mainland China. The latter is a major feat for a Taiwanese businessperson, particularly considering there are still no direct commercial flights

between Taiwan and China due to the political animosity between the governments of the two nations. The very fact that he was able to broker a deal to open a manufacturing plant in mainland China is a testament to what Shih is all about: unbridled optimism.

The Many Generations Of Acer

Consider, for example, the number of permutations Acer has gone through in order to achieve the success that Shih sought for the company. It started in 1976 as Multitech International Corp. and first became known outside Taiwan as the creator of the MainPro/View II — an Apple II clone that was much more compact than the product then being shipped out of Cupertino.

Apple, however, was never keen on clones, and the MPV-II didn't last long. Undaunted, the company adopted the Acer name in 1984 and proceeded to launch its first 16-bit computer in the wake of the IBM PC's success. Disastrously, however, because as Acer created a 100 million computer sale chain in Taiwan, while overseas Acer slowly emerged as a credible PC clone manufacturer.

In 1986, the company opened a U.S. office in San Jose, Calif., and followed with a U.K. operation in 1987. By 1988, Acer had shipped one million PCs and began to taste the real fruits of success. One such perk came in 1990 when Acer had deep enough pockets to buy multi-unit computing power. After



Computer Systems and then finds a way into the "high end" of the PC market.

A lot of this achievement may be attributed to

Shih's office "hands off" management style. Unlike the Microsoft CEO and co-founder to which his Taiwanese admirer compare him, Shih apparently does not spend a lot of time micro-managing the company and leaving "E-mail" about company projects he is copy-paste with.

Independent Units

Acer is organized instead into independent business units. They include strategic business units (which have their own responsibility for research and development, product management, manufacturing, and OEM sales) as well as regional business units that are responsible for distribution, service, and marketing functions.

The company says this structure produces independent ownership and responsibility, which in turn creates strong motivation incentives. It says that under this scheme decisions are made faster, management becomes much more focused and a better understanding of overseas markets is developed. In addition, the company developed

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what it calls a "fast food" logistics and assembly business model, and a "client server" organizational management structure.

Components are pre-produced in large, centralized mass-manufacturing facilities, then are shipped to assembly sites close to local customers. Acer says this makes it possible to enjoy production economies-of-scale while also tailoring each individual product to suit the needs of each individual customer — and that the result is standardized quality, customizable products, and lower inventory costs.

Meanwhile, the so-called "client-server" management model lets each business unit, and even Acer-affiliated business, act independently. However, the model also coordinates efforts to benefit from full use of Acer's international resources.



"I believe in employee ownership and local society ownership," says Shih. "We create really companies that

look good to the (given) company and look good to the market. If they are not good, of course I am in trouble. But they are independent and include as many inner companies that can help each other. So naturally there is a consensus view. Employees are free to make decisions for their local market. It is not a headquarter-centric view."

New Strategy

In North America, the task of implementing a new Acer manufacturing strategy — which will see some expansion of both custom configuration and build-to-order operations — has fallen to new Acer America president Min Wu. Although he was only appointed to his new post in August, Wu has already signed a deal to implement a "custom configured" strategy.

Acer's AOPEN subsidiary is supplying Canada's Future Shop consumer electronics retail chain with all the components needed to

create their line of custom configured computers for sale in Future Shop stores.

"Future Shop recognized that there is a growing market segment who know exactly what they want and (under the terms of this deal), they can come to the store and specify exactly what they want," explains Wu. "With AOPEN components, it gives Future Shop the flexibility to build the machines that the customer specifies."

Wu also says that the company is continuing to press into the retail market with its own Aspire range of PCs — and will offer some basic "build-to-order" capability there (although still only through the existing retail channel). He further explained that the company is still also working to make a bigger impact on corporate personal computer buyers through new models (expected by its purchase order this year) of the notebook computer operations of Texas Instruments.

The Canadian Effort

While much of Acer's North American focus right now is on the United States, it also has put a reasonable degree of resources into the Canadian market. The company has 50 employees in Canada, including staff working at the assembly plant in Mississauga, Ont. Acer in Canada is a branch office of Acer America, and as such does not involve revenues for the Canadian operations except as part of the overall sales figures for Acer America (which reported total sales revenue of US\$1.3 billion in 1996).

Canadian sales, marketing, assembly and customer service activities are managed from the head office in Mississauga, Ont. Anthony Lee is Acer's general manager in Canada. The Acer America head office in San Jose, Calif., is used to support the Canadian branch in research and development, engineering, product marketing, and administration.

Acer Commercial Systems (AcronPower desktops, AcronAios servers and Acer's Texas Instruments notebooks) are sold through four national distributors: EMI Data Systems, Globelle, Merrill Canada, and Tech Data Canada. End-users purchase their Acer systems through a wide variety of value-added resellers and retailers across Canada. The Canadian Acer sales force is currently responsible only for commercial system sales.

Acer Retail Systems (Acer Aspire,

AcerNote Light) are sold via one national retailer (Future Shop) and one retail distributor (Reamscope Canada).

Meanwhile, Acer's AOPEN components (such as CD ROMs, scanners, and mother boards) otherwise is managed from the AOPEN division located in San Jose, Calif.



The Canadian retail marketing situation is divided into two areas: Acer-branded manufacturing and OEM manufacturing. OEM manufacturing is already underway in the Canadian plant. Acer says it is planning to expand its Canadian production capability to begin local assembly of Acer-branded desktop products soon.

Struggles Ahead

Not everyone appears to be convinced of the inevitability of Acer's success. Leslie Fiering, vice president of platform and operating system technologies at market research firm Gartner Group, says that while Acer does benefit from a large worldwide manufacturing infrastructure, manufacturing is not the company's problem in the U.S. "They are not doing a very good job — they have just not done the marketing," she said. "They have repeated the momentum that they brought [with the Texas Instruments notebook business acquisition]."

Fiering says Acer's current challenges are multiple. "They need to restore momentum to the Acer name. Although they have won some government deals they are getting killed by Gateway in large U.S. PC manufacturers that sell PCs direct," she comments.

"We are just not seeing them stake out an area (in the corporate sector). They had such good product in the notebooks, but between now and Fall/December there will be some fabulous products and strong new players." ■

Greg Whalenberg is a Vancouver-based technology and business journalist. He can be reached at gwhalenberg@netcom.com.

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Asian printer sales above US\$3 million, says study

Dataquest Asia Pacific has just released figures for the second quarter 1997 in the printer market in Asia Pacific region (outside Japan) which shows over 8.6 million printers being shipped.

A total worth more than US\$6815 million in end-user revenue, this represents nearly 40 per cent growth in shipment volume and 20 per cent growth in total end-user revenue over the same period in 1996.

The region's unit shipments grew by 11

per cent in the second quarter of the year as compared with first quarter shipments of nearly 1.3 million units. Total end-user revenue from printer sales in these markets grew by over eight per cent from the first quarter to the second quarter of the year. With more than 3.1 million printers worth more than US\$1.6 billion in end-user revenue shipped in the first half of the year, the region is on a pace to exceed six million units shipped and US\$3 billion in end user revenue in 1997.

Jet-set models continue to shape the region's printer market, taking 61 per cent of the total shipments in the second quarter and registering 11 per cent growth in volume over the first quarter. The page/letter technology segment is growing at the expense of impact printers this year, with second quarter laser shipments climbing more than 16 per cent over first quarter volume. At the same time, serial dot matrix printers fell from 22 per cent share of first quarter volume to account for just above 20 per cent of second quarter shipments.

South Korea accounted for 24 per cent of the unit market, followed by Australia with nearly 16 per cent, then China with over 16 per cent and Taiwan at nearly 10 per cent.

Empak opens new cleanroom molding plant in Malaysia

The Southeast Asian microelectronics industry has a new cleanroom molding plant in Malaysia, marking both the increasing demand for memory disk products in the region, and the growing importance of Malaysia as the region's electronics hub.

The 105,000 square-foot facility, constructed by Empak, a Colorado Springs, Co., provider of memory disk process and shipping products, is located in the Kuching Hi-Tech Park outside the Malaysian capital of Kuala Lumpur.

The location, said Empak spokesperson Deborah Smith, "has the ability to significantly cut lead times and lower customer shipping, administrative, and storage costs. There is a growing need for local molding facilities in Southeast Asia," Smith said. "And the geographic location allows for quick delivery anywhere in the region."



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DVD Video sales figures announced



After an initial silence, manufacturers of DVD-Video players are beginning to release sales figures and the message they are all keen to get across is everything is running according to plan.

The format was first launched in Japan, in November 1996 and has recently been launched in North America.

At Mitsubishi Electric Industrial Co. Ltd., sales in the period from April to June 1997 were 100,000 units worldwide, and a company spokesperson Cumulative sales, from November 1996 to the end of June 1997, were 300,000 units. The company plans DVD-Video player production of 600,000 units worldwide in the current fiscal year, which ends in March 1998.

Pioneer Electronics Corp. said that in the period from January to July this year, it has managed to get a 50 per cent share of the Japanese market on sales of 414,000 units. For the six-month period from September 1997, Pioneer says it is aiming at sales of 950,000 units in Japan.

In other markets, during the period from January to July, Pioneer reports sales of 215,000 units in the United States and 61,000 units in Asia. Forecasts for the September 1997 to March 1998 period call for sales of 140,000 units in Europe, 253,000 units in the United States and 191,000 units in Asia.

Hitachi Ltd., which is putting most of its development effort into the computer-oriented DVD-ROM and DVD-RAM formats, said it sold 2,000 DVD-Video players in the period to the end of March. For the current fiscal year, which began in April, it is targeting sales of 50,000 units, a spokesperson said.

Toshiba Corp. would not release its figures, but said total sales in Japan to the end of March 1997 were 150,000 units and it shared those sales with three other makers. It did confirm sales for the United States market, saying it shipped 120,000 units in the three months from April.

Officials at Sony Corp. have said its second generation player in Japan has a sales goal of 5,000 units per month. ■

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Voice Recognition Software Comes of Age

by Alan Tressler

The Next Big Thing in computing may, very well, be an area most computer users seldom think about. Sure, increasing processor speed and increasing bandwidth get everyone's attention — but the bottom line for all of us is how we communicate with the box on the desk.

Keyboards go back to computing's early days, and the now-obnoxious mouse goes almost as far (though we now have variations of the latter, such as trackballs and trackballs that, when the rubber hits the road, using a computer almost always means sitting at a desk and interfacing manually (which means, of course, using our hands). The consequences of that pattern are significant — carpal tunnel syndrome has become as familiar as the common cold, and back problems afflict many of us.

Strange, when you think about it. Why, when Moore's Law has pushed the capabilities of computing power, and when operating systems have all gone to infinite-scroll GUIs, are we back in the dark ages of tapping out messages to the box on the desk? Isn't there a better way?

Thankfully, there is. Voice recognition software, which has been around for some time, is now poised to go mainstream. Once

and the days when directing the computer by voice meant limited, awkward speech, tons of training, and hefty system requirements. The latest in voice recognition allows natural speech, requires minimal adjustment time, and runs on the kind of computing power that's affordable and available. The result, the purchase price of many versions of the top voice recognition packages is well within the reach of both business and home users.

The basis of voice recognition is the "engine" that allows spoken input for desktop navigation and direction. For example, users of IBM's G62 Way it who have machines with 32MB of RAM can open and close applications and play games on their systems by voice alone. With 128MB of RAM, they can dictate to the computer, which peels word processing and E-mail messages into five Tric-type sentences. Both navigation and direction, however, have required in the past that the operator adapt to the limitations of the software, which takes both time and effort — and therefore lessens the functionality of voice recognition. Still, this feature is much-used, both by home users and professionals — such as physicians — who need to adopt a "hands-free" approach to their computer use.



Voice recognition engines have made great gains in recent months, according to Glen Rogers, market manager for speech recognition, at IBM Canada Ltd. "We saw a big jump in usability," he says, "when we got away from relying on proprietary soundcards — now voice recognition uses industry-standard soundcard drivers."

Stronger accessible products and price points. IBM launched Simply Speaking in October 1996 — an entry-level desktop product for home and student users. An enhanced version, Simply Speaking Gold, hit the streets in June 1997.

Usability matters greatly to those approaching voice recognition for the first time. The fact that natural speech is now a feature is what's driving voice recognition to "take off," says Steve Chapman, marketing manager for Inquran Micro Inc. (Canada). "The older software was hard to use," says Chapman. "You had to speak slowly, and make sure that your speech was distinct. The new software, such as IBM's, recognizes natural speech, and recognizes both the content and the syntax used by the speaker. The combination of a much better product and good price points is going to change the market, and, eventually the workplace."

Dragon Systems Inc., a long-time presence in the voice recognition field, recently announced an enhanced DragonDictate Version 3.0. Like IBM's Simply Speaking line, it emphasizes accessibility and ease-of-use, offering Microsoft Office '97 support, built-in text-to-speech capabilities, compatibility with the Dragon NaturallySpeaking continuous speech dictation system, numerous new interface improvements, and significantly lower prices.

Usability, as always, is at the forefront of new development. The new level in voice recognition is in enhancing the interface between the voice recognition "engine" and commonly-used programs and applications.

IBM's new Via Voice application gets a long way towards making the interface transparent, as it offers dictation — though not command control or navigation — with Microsoft Word versions 6, 7, or 8, as well as with its own integrated word-processor.

DragonDictate provides voice navigation and document creation within virtually any Windows application, a significant advance over older, proprietary voice recognition programs.

Home users will revel in the "Make a list" aspects of being able to organize through their files by voice, create documents into their wordprocessors, and even share gameplay without touching the keyboard or mouse.

"We saw a big jump in usability when we got away from relying on proprietary soundcards."

—Glen Rogers.

IBM's Rogers points to Simply Speaking Gold's ability to interface with Netscape Navigator as the next step forward, as it will provide users with both voice navigation to Web sites and dictation to E-mail readers. For the home and student user, the payoff is in ease-of-use and the "pay what" factor.

Where voice recognition really shines, though, is in settings where ease of use translates into efficiency and cost-effectiveness. Obvious examples are the office, legal, and medical fields, where speed and accuracy in getting information into computerized formats is both prized and rewarded.

Richard Hill, Cal-based WildCard Technologies Inc. (the maker of a 1996 merger between voice recognition pioneers Para Data Ltd. and Kaltron Technologies), pro-

"The new software, such as IBM's, recognizes natural speech, and recognizes both the context and the syntax used by the speaker."

— Steve Chapman.

duces two "targeted" voice recognition programs, OfficeTalk and LawTalk. As John Stachulak, speech recognition product specialist at WildCard explains, "These programs are the interface between the voice 'engine' and end-user applications. OfficeTalk, for example, works with IBM and Dragon engines, and adds templates, macros, and more so that the engine and the application merge automatically with Microsoft Office97, Corel WordPerfect, and Lotus Smart Suite. LawTalk offers similar functions, with added vocabulary suitable for legal professionals, lawyers, and police officers. It works directly with such programs as QuickLaw, Westlaw, and Lexis/Nexis."

Education-based Atlas Technologies Inc. produces ModTalk, LawVoice, AtlasVoice, TMForum and DocuTalk, each built around the IBM and Dragon engines, and each targeted to a specific vertical market. To ensure that the programs' templates and vocabularies are relevant and up-to-date, Atlas adds industry experts to its programming and management teams — for example, a legal committee consisting of ten lawyers, and a medical committee consisting of six doctors. "The only way to get the necessary knowledge base in by having professionals as part of the development team," says Atlas president Oscar Ioffe Jr. "The result is a product that actually becomes sensitive."

The combination of powerful engines, target-specific interfaces, and improved price points indicates that voice recognition is about to explode. With all these new developments, says Inquran Micro's Chapman, "there are really no limits to voice recognition usage. We're looking at something that makes using a computer easy and time-efficient. That's going to open up new opportunities for existing installers, and make it possible for new installers to get on board. There are exciting times for voice recognition." ■

IBM Corp.
<http://www.software.ibm.com/voice/type/>

Dragon Systems
<http://www.natural.speech.com/>

WildCard Technologies Inc.
<http://www.wildcardtech.com/>

Atlas Technologies Inc.
<http://www.atlas.com/>

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Reality Cheque: Corel Follows The Money

by Jeff Evans



Corel's radical shift away from an emphasis on the Java programming language perhaps signals a re-commitment to domestic sales and market realities.

In August, Corel announced that it was no longer promoting any imminent release of its much hyped Corel Office Suite for Java, an integrated set of platform-independent business applications written in the Java programming language. Instead, Corel would scale back its short-term Java ambitions, and concentrate on developing new applications based on the Windows NT operating system. (Corel says it will work on developing its Rostera Java technology as Corel WordPerfect Suite 8, or other software such as Microsoft Java, can be run on a server and accessed via a thin Java client on any Java virtual machine.)

But this was a considerable turnaround for Corel, which for the last year had been displaying analysts' projections that suggested that sales of low-cost Network Computers (NCs) would very quickly outstrip Windows-based PCs, and the Java software market would quickly become a bonanza for Corel. In fact, sales of NCs have been extremely modest in terms of market share, and Corel's Java suite was proving extremely difficult to bring to completion as a bug-free, high-performance product. So, Corel finally faced up to reality, and while admitting that there is a long-term opportunity in the Java market, it has to admit that in the short term, the market still prefers the MS Windows operating system.

The switch of emphasis from Java to Microsoft NT is part of an overall Corel strategy to concentrate on proven winners, rather than gamble on "bleeding-edge" unproven or unprofitable products and markets.

Rise, Fall And Rise Again

Corel pretty much invented the mass market for desktop graphics on the PC with its first release of CorelDraw in 1986. While most of the sophisticated graphics software developers concentrated on the Mac platform, Corel

saw a huge untapped need for relatively simple to use, affordable graphics software in the Microsoft mainstream of computing. The result was a bonanza for the Ottawa-based company, as business computing professionals and graphics pros and amateurs all voted with their wallets for what was then the only full featured illustration software on the MS-DOS-based platform. Corel cemented its leading position for over a decade, by offering unbeatable value for money.

Corel's CEO, Michael O'Connell, also developed a canny marketing organization that kept CorelDraw's profile high in the market, and which also cultivated a fierce loyalty among hundreds of thousands of CorelDraw users. The company was profitable, respected, and experienced solid growth.

But Then What?

To enable further growth, Corel moved into new product areas, both through in-house research and development, and acquisitions. The company led the world in the development of responsive digital stock photography libraries, eventually establishing a library of thousands of Photo CD titles. It published dozens of home "e-reference" and games CD-ROM titles, as well as a professional reference CD-ROM library.

Corel purchased the Ventura Publisher program, seeing that title's powerful document publishing capability as a natural complement to the CorelDraw package's illustration and image processing muscle. Corel also developed a videoconferencing hardware product line. For relatively little up-front money, Corel also bought up the struggling WordPerfect product line after Novell's bungled attempt to integrate it into the networking giant's line. And, finally, Corel undertook its boldest venture, an effort to usurp mighty Microsoft by becoming the world leader in business software based on the untamed Java programming language. In the last year-and-a-half, though, virtually all of these varied efforts have proven not to be the magic

the billions' club of software makers. The PhotoCD venture made decent sales and, likely, profits, but partly due to the problem of marketing and selling thousands of CD-ROM titles via retail software channels, remained a limited money earner. The home and educational CD-ROM division was sold off.

The videoconferencing line struggled in a market dominated by many other players, including industry leader PatentTel. Ventura Publisher turned out to be an unexpected mine, as its tangled, aging code was virtually un-upgradeable after an unusable new version of Ventura was released and then essentially withdrawn from the market, the whole program had to be re-written from scratch.

The WordPerfect suite generated respectable sales, but its ongoing marketing, support and development costs dwarfed the initial acquisition price, boosting Corel's gross sales but contributing little to short-term profitability.

And, finally, the Java initiative simply didn't show any prospect of immediate revenue potential. The Java OfficeSuite remained for years in a state, and there was no rapid growth in the installed base of Java-based Network Computers (NCs) to run the software on, if and when it could be perfected.

Back To Basics

So now Corel has refocused on its core business, retaining those parts of the product line for which there is demonstrable demand, and credible sales potential. As with all reorganizing efforts, there is always the spectre of "too little, too late," but in the case of Corel, the company has frequently deployed technological and marketing skills that earned it the nickname of "Microsoft North."

The question remains whether, after catching its breath and entering the NT software market — can Corel quickly regain its traditional prominence as one of Canada's handful of "world-class" software publishers? ☐

What Went Wrong

None of Corel's new ventures generated the enormous sales needed to catapult Corel into



Jeff Evans is Associate Editor of Canadian Computer Weekender. He can be reached at jef@ltp.com.

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The Best in Internet Gadgets?

by Russ Collier



There are a number of pieces of software that I like to call "Internet gadgets" that should be included in your service tool-kit, and can be helpful to many of your clients.

While there are many tools available, the following have been narrowed down based on price. As usual with freeware or shareware, it is worth everyone's while to support the authors of these products by registering the software or purchasing more elaborate versions. A lot of these utilities deal with the most common problem reported on the Internet — waiting. There are some quite simple solutions to improve the performance of your connection without spending a lot of money.

Product: ICQ

Company: Mirabilis

<http://www.mirabilis.com>

Price: free (while in beta)

This is one of the most useful gadgets that I have seen for the Internet. It is basically like a pager, telephone and monitoring device all in one. When you load it, you can let people "see" that you are on-line and when they are on-line. Small messages can be sent to people which will pop up on their screen. It also has a nice chat feature. Although this is an Internet tool, it could be used within a company for your own staff to keep in touch.

Product: Screenshot

Company: MorphTech

<http://www.morphtech.com>

Price: free

Screenshot is a great tool for stress-testing a Web site to find out if it can handle differing amounts of traffic. It will simulate a specified number of client machines performing a specified number of hits to the site. It then calculates the time it takes to process those requests. By taking the total number of requests and dividing that into the total time,

you will arrive at a time per request. By increasing the numbers, it is possible to see how increased load affects the site and the Web server. This can also be used to benchmark CGI's and other Web server extension software.

Product: NetMetric

Company: Vital Signs Inc.

<http://www.vitalsigns.com/>

Price: US\$49.95 (free trial download)

While this program is not shareware, it is an extremely useful program. NetMetric allows the measuring of the health of your Internet connection and where the bottleneck lies so they can be suppressed. Is it your PC, your modem, ISP, remote Web site or the Internet itself? This program provides an extensive amount of reports on the status of your connection and provides hints on how to speed it up.

Product: TweakDUN

Company: NetPro Networks

<http://www.net-pro-networks.com/~netpro/networks.htm>

Price: shareware, US\$18



This is an amazing discovery that will help speed up dial up modem connections. The Windows 95 default settings for TCP/IP format users are great for LAN access but perform poorly in a SLIP or PPP connection. TweakDUN will make all the necessary registry setting changes to maximize file transfer and speed of the dial up connection for downloading data to the PC. Some people have reported doubling the transfer rates after using this utility program to tune the machine.

Product: NetJet

Company: Peak Technologies

<http://www.peak-media.com/PeakJet/>

Product: NetJet

Price: US\$19.95 (free trial download available)

The NetJet product increases surfing speed by up to 50 per cent, by making smart use of the browser's cache. It basically reads ahead to the hotlinks on a page that is currently being viewed, in anticipation of the user clicking on one of them. This gives a perceived performance increase because most browsers sit idle for 90 per cent of the time while the user reads the page on the screen. By intelligently looking ahead, when the user clicks a hotlink, the page is already downloaded and can be displayed instantly. NetJet uses a Java plug-in to fix the background page downloading.

Product: HTML Freeware

Company: Intranet Internet Systems Inc.

<http://www.html.com>

Price: free (more advanced versions available)

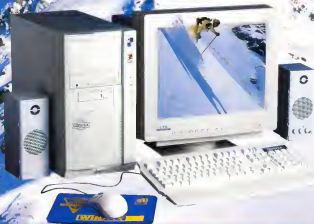
The product is used to provide database connectivity to Web pages. This is loaded on the Web server and provides additional tags to the HTML language to provide for database access as well as the server environment variables. Other editions on this product family provide a more robust set of HTML-like tags to allow the developer to create dynamic and interactive Web sites.

I hope you find the above mentioned gadgets worthwhile in your business. I am sure that I have left out many wonderful pieces of software that are worthy of a mention, so please feel free to bring those to my attention so that they may be included in a future column. ☺

Russ Collier is the president of Intranet Internet Systems, Inc., which focuses on the development of dynamic Web sites for corporate clients. He is also president of the Toronto Internet Developers Association (<http://www.tidaweb.com>) and can be reached at russ@idnet.net.



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The Empire Strikes Back Intel's CPU strategy

by Alan Zimmer



True, let's see how Intel is responding to the attempt to keep itself the choice of the overwhelming majority of computer users.

We'll start with a quick overview of Intel's current lineup, which, partly as the result of the company's "Intel Inside" advertising campaign, powers 96 per cent of the world's personal computers.

• **Pentium.** Intel was surprised by the speed and extent with which the market migrated to its newer MMX models, and was stuck with a large number of stockpiled "classic" Pentiums. The result: rapidly dropping prices. Budget-priced P166 systems and P133 notebooks can be good value, if you can convince consumers to purchase them!

• **Pentium MMX.** Add 57 multimedia instructions, and a larger on-board cache to a classic Pentium and you get a Pentium MMX. Intel's current standard processor. Desktop speeds at 330MHz and portable versions at 160MHz are common. Intel, for modest speed improvements, particularly in the version aimed at mobile users, with the so-called Tillamook chip. Intel CPUs are mostly code-named after rivers in Oregon: offering 200MHz to 230MHz speeds at lower voltages. Intel, however, wants to move the market away from the Pentium designs.

• **Pentium Pro.** This CPU was actually marketed as the next-generation up from the Pentium, but has become a developmental dead-end (for Intel, its integration of the L2 cache with the CPU is a sort of super-chip was expensive and difficult to manufacture). As well, its operation for 32-bit code with poorer performance for Windows 3.1 and 95 16-bit code made it unpopular on the desktop. Despite this, it is Intel's strongest choice for network servers requiring multiple processors and support for large amounts of RAM. And, the on-chip L2 cache lets a 300MHz Pentium Pro perform as quickly as a 230MHz Pentium II. A new version of the chip has 1MB of L2

cache (up from 512KB), but its speed is stuck at 300MHz and no further enhancements are expected.

• **Pentium II.** Intel's current top-of-the-line model is available at 333MHz, 366MHz and 400MHz. Current models have been hot-rodded to speeds of up to 450MHz (don't try this at home boys and girls — speed cooling is needed). In brief, Intel removed the L2 cache RAM from the Pentium Pro simplifying manufacturing, then added the MMX instructions. Then, the company put the CPU and the L2 cache onto a Single-Side Contact (SSC) cartridge, about the size of two multicomponent cases. This forces the processor to communicate with the cache at half the speed possible in the Pentium Pro design, and requires extensive motherboard redesigns to accommodate the so-called Slot 1 needed to hold the SSC cartridge. This design also rules out the current Pentium II for today's notebook form factors. Ironically, the 440FX chipset, used with first-generation P-II motherboards, lacks features such as SDRAM support that are available on less-powerful Pentium MMX systems.

As well, Intel is continuing to squeeze as much performance as it can from its processor designs. Here's what we can be looking forward to from the company:

• **A speeded system bus.** Motherboard designs have been stuck-out with a 66MHz system bus for the past three years, limiting real-world performance improvements even with faster CPUs. Intel is expected to push the system bus up to 100MHz sometime next year (April). First, however, there is a problem to overcome — such systems lack radio-frequency noise that can interfere with TV signals. Slot 1 cartridges will be modified to provide less noise — look for incompatible Slot 2 designs for the faster system bus. Slot 2 designs will also support up to four Pentium II CPUs, up from the limit of two in Slot 1 designs — more of a match for current Pentium Pro systems. (The Slot 2 design will also allow the CPUs to access the L2 cache RAM at full speed — again like the current Pentium Pro).

• **The side-connection lived up from the CPU.** A just-released Pentium II chipset (440LX) adds Advanced Graphics Port sup-

port, helping to pull the graphics traffic off the main system bus. To benefit from this, users will need a new-model AGP video card, along with operating system support not available until the release of Windows 98 (Memphis) or NT 5.0 next year. In the interim, Intel is releasing a patch allowing Windows 95 to support AGP. The 440LX chipset also allows Pentium II systems to use faster SDRAM

memory and access hard disks using the faster ATA-29 bus, standard in the last half of 1995 look for the 440LX chipset for 100MHz bus support, and 400MX for quad-processor support.

• **Faster faster Pentium II models.** Expect 330MHz versions in early 1996, with speeds ramping up to 400Hz later that year. As well, look for a compact cartridge design, aimed at ultra-thin notebooks.

Intel also has a number upcoming CPU models for new, code-named after rivers. Breaks up on your geography for:

• **Donatone.** Expected early next year, in a 300MHz to 330MHz Pentium II model aimed at notebooks.

• **Katama.** This Alaskan river chip is expected to offer MMX-2, with enhanced 32-bit multimedia instructions in mid-1996.

• **Williamette.** Expected late next year, an enhanced P-Pro core, with MMX (or MMX-2) designed for the 100MHz bus.

• **Merced.** In California rivers it's named after for the sake of the century. With input from Hewlett-Packard, this marks the end of the 32-bit x86 series that debuted with 1985's 80386, replacing it with a 64-bit x86-64 instruction set. Merced is expected to use a RISC-like design, and to be backward compatible with Intel's 32-bit designs and current software and operating systems. □



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So — Are You Liable?

by Douglas Gray



If you are operating a proprietorship or partnership, you are personally liable for the full debts or liabilities of your business. So you decide to incorporate a company to avoid personal liability. Does this really protect you in all situations? The answer is yes, no, and maybe.

Although it is accurate that shareholders are not personally liable for any debts or liabilities of the cor-

poration unless the shareholder signed a personal guarantee, directors and officers could be liable. Lenders are more likely to request that all the directors of the company sign personal guarantees for corporate loans, which would mean that your spouse or other relatives, if they are put on the company as directors, could be asked to sign a personal guarantee. Be cautious, therefore, about directorships.

The liability that most directors are potentially exposed to is statutory liability under federal and provincial legislation. You should be aware of these areas of potential exposure to be sure that you do not inadvertently or inadvertently allow yourself to be named as a director. Directors can be individually and col-



"To protect yourself as much as possible from personal liability exposure as a director, it is your responsibility to be duly diligent in terms of monitoring the company's operation."

lectively liable for the full amount of the debts or liability under most of these statutory regulations. If you are a director of a company, you are deemed to know or should have known of the obligations of the company to meet its commitments under provincial or federal legislation. Naturally, provincial legislation may vary. Some of the common areas of potential director liability are as follows:

- **Employee deductions.** When deductions are taken out of an employee's salary, they are to be remitted every month to Revenue Canada. If the funds are not remitted, Revenue Canada could sue you for the amounts outstanding, in your capacity as director.
- **Sales tax.** If you are operating a business that is responsible for collection and remitting provincial sales tax on a regular basis, and the company fails to do so, you could be held responsible as a director for these financial obligations of the company.
- **Corporate income tax and GST.** If your company owes money to Revenue Canada and fails to pay it, you could be responsible as a director for money that should have been remitted.
- **Employment standards.** If your company has not paid employees for past services rendered or for holiday pay, then employees can formally complain to the appropriate government department. That department could sue you as a director of the company for arrears of wages and salaries owing to all employees plus holiday pay.
- **Workers' Compensation Board.** In the event that your company

fails to make Workers' Compensation Board payments, the WCB could sue the company and, depending on the provincial legislation, could also make a claim against the directors. In addition, employees who assume they were covered for WCB protection in the event of injury, could sue the company as well as the directors for negligence, and the WCB could charge to your company the full amount of the payments that were incurred due to the employee's disability. In addition, they could hold the directors responsible if the company did not pay.

- **Extra-provincial business activity.** If you are doing business in another province, and have not extra-provincially registered your corporation in that province, you could be personally liable as a director if someone sues your company in that other province. The test for doing business in the other province usually refers to having all the trappings of a business, such as telephone number and listing, office address, business licence, and staff. Marketing products by mail order or providing consulting services throughout Canada, based from your home provincial address does not mean doing business in another province. Speak to your lawyer if you intend to provide services or products outside your province.

- **Environmental damage.** Both the federal and provincial governments have legislation making directors liable for environmental damage caused by their company.

To protect yourself as

much as possible from personal

liability exposure as a director, it is your responsibility to be duly diligent in terms of monitoring the company's operation. If you do not have the time or inclination to do so, or you are being frustrated by the inability to obtain the information that you need because of poorly managed systems or lack of cooperation from management, then you should consider resigning as a director and making sure that you protect yourself in writing in terms of spelling out clearly the reasons for the resignation. Always keep copies of any correspondence.

Also, make sure that you speak with a lawyer specializing in business law to make sure that you have structured your director and officer corporate relationship in such a way as to avoid or minimize the risk of liability exposure. ☐

Douglas Gray, LL.B., is a Vancouver-based lawyer by training, speaker, columnist and author of 15 best-selling business books, plus a real estate investment software program. His books include The Complete Canadian Small Business Guide and Home Inc. The Canadian Home-Based Business Guide (both published by McGraw-Hill Ryerson) and Start and Run a Profitable Consulting Business and Marketing Your Product (both published by Self-Concept Press).

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Are Your Customers Secure?

Providing solutions to your customers' security concerns is a crucial service you can provide; and the rewards are lucrative.

by Paul Weinberg

The excitement surrounding the Internet is also producing some legitimate fears about security — and indeed is creating opportunities for value-added resellers.

Small-to-medium-sized organizations are finding their internal networks fully exposed to the full force of open cyberspace. Five years ago, a company with a 10-workstation LAN might have had zero concerns about vulnerability.

But nowadays, a day does not go past without a new computer virus appearing to wreak havoc, or a news story appearing about a hacker breaking into a corporate installation.

"TCP/IP doesn't care if you are a president or an individual," says Greg Shannon, chief scientist for the Ottawa-based Milkyway Networks, a provider of security software solutions.

Robert Fabian, director of Knowledge Transfer at the Toronto-based GSA Consulting Group, said external threats to computer networks may be providing lots of opportunities for consultants and VARs with solutions at hand.

Shannon adds there is a shortage of consultants in the field.

Although the price for security products such as proxy servers, firewalls and restrictive routers are still high, market resistance is about to melt, Fabian says. "Both the level of awareness and level of attack [on a system] is going up. [Security] might lead to the purchase

"TCP/IP doesn't care if you are a president or an individual."

— Greg Shannon

of a \$5,000 box, but it is worth the expense."

The number of actual computer hackers available to damage one's system may be infinitesimal, but that does not alter the need for a shield against unwanted outside influences, states Fabian. "It is not too different from insuring your automobile. If you have a PC, it is vulnerable to attack."

Fabian adds that business opportunities lie primarily with external network protection, while internal security is primarily a low-tech matter involving intelligent corporate procedures for the handling of

privately stored data. No new technology is required, he says, because the wisdom for the main networking operating systems — NT, Unix, and Novell NetWare — "have gone a fair distance to include protective measures."

Bob Pritchard, president of the Toronto-based R.F. Pritchard & Associates, avers however that it will be another six months or longer before resellers can begin to gain some business opportunity from computer security. He notes that the products are usually configured as part of a network solution sold directly to the end user organization by the vendor itself. These are also proprietary issues, particularly with encryption and the electronic key access that need to be resolved within the industry, Pritchard adds. "I can think of a half a dozen different standards."

Security is part of doing business in network installation, but it does not stand out yet as a market by itself, explains Larry Noble, president of the Toronto-based Extran Computer Systems Corp. "Customers want a measurable level of security, but they don't want it taken to the level of the RCMP."

"People are not into exotic products." He notes that all his clients are mining tape backups, anti-virus products and a firewall if there is Internet access, but little demand exists yet for encryption.

Matthews Ont.-based A.C. Nielsen & Co., a firm that measures purchases through the reseller channel, has not yet included firewall products in its research because sales at the low-end of the PC market are insignificant right now, says account executive, Daniel Ryan.

On the other hand, concerns regarding easy Internet access to internal networks has made the adoption of an anti-virus application more of a priority with a growing number of users. Also, vendors have started to take reseller channel more seriously, he says. The result is that more than 197,000 pieces of anti-virus software were sold in the reseller channels in Canada last year, compared to 86,359 in 1995. Even a year ago, it didn't matter if one had anti-virus software.

Michael Zberry, vice-president and research director for the Stamford, Conn.-based Gartner Group Inc., estimates there are about 10,000 computer viruses, of which about 200 are considered serious. Because new viruses continuously appear updates of standard anti-virus products can be downloaded off the vendor Web sites to neutralize

the new details.

Major anti-virus software vendors include Symantec Corp., McAfee Associates, Checkpoint Software Inc., Dr. Solomon's Software and IBM.

Some clients will cover themselves by installing different brands of anti-virus products because some vendors are faster off the mark with fresh updates than others, adds Stanton.

Computer security is complex because it involves a whole range of issues, including authentication, access control, privacy of information, integrity of data, non-repudiation (verification of recorded transactions) and disaster recovery planning, each of which generate unique products.

But resellers and systems integrators engaged in such solutions often shy away from calling themselves security specialists. It has something to do with liability, explains Brett Dicks, national manager for Internet solutions for the Ottawa-based Kanotek Technologies Inc.

Although Kanotek, a VAIL and systems integrator, is knee-deep in existing multi-brand organizations in implementing secure networks, relying on products developed by Ottawa's Milkyway Networks, it distinguishes itself from the security consultants who promise to provide a certifiably safe computing environment. Often these security professionals are ex-hackers who have established "Tiger-Team companies" which make it their goal to shore up gaping holes in an network, says Dicks. Clients appreciate Kanotek's limitations, he adds.

No organization is absolutely secure, states Dicks, even with all the protection in place, including perhaps a hierarchy of firewalls that determine which category of employee has access to sensitive information.

"People are lulled into a false sense of security when they implement a firewall. It is just one tool in the implementation of a security policy," he says. Hence, Kanotek's step-by-step building block approach to creating a systems architecture, Dicks has found that clients prefer to graduate into newer levels of security, he adds.

Kanotek is on retainer with accounts to maintain an ongoing process of security management, in a partnering relationship. One of Milkyway's products, SecurIT Audit, alerts the client to pre-empt breaches in an Internet-based network, as well as offer solutions to root them out.

"People are lulled into a false sense of security when they implement a firewall. It is just one tool in the implementation of a security policy."

—Brett Dicks

Dicks says that Kanotek's evolved towards computer security from its original focus in client/server network applications. Many clients include financial services companies and the large telcos, both of which are increasingly dependent on teleworkers and remote access. He has been engaged in the setting up of virtual private networks where "a security tunnel" is established between the client organization and its remote sites over the public data networks. Here,

the Milkyway firewall technology is bundled with encryption tools developed by Ottawa's Entrust Technologies Inc.

Another company, the Edmonton-based Galush & Associates Inc., has a different approach to the market. Formerly a reseller representing Checkpoint firewall products, it has since switched into becoming a consultant in document management, where security remains an important element in solution design. Jayson Tynko, Galush's chief financial officer, said "Most resellers got into security because they thought it was easy. But we wanted to get back to our main focus. Customers are not sure what they want." ■

"If you have a PC, it is vulnerable to attack."

—Robert Fabian

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Email — <http://www.ecwv.com>

Fabian — <http://www.GSALink.com>

Gartner Group — <http://www.gartner.com/news/shrader.html>

Kanotek — <http://www.kanotek.com>

Milkyway Networks — <http://www.milkyway.com>

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Paul Weinberg is a Toronto-based journalist, specializing in high-technology reporting and business. He can be reached at pcw@interlog.com



E-mail: ccw@tep.ca



Gathering Customer Intelligence Via The Web



by George Bennett

Are you trying to figure out how to make your Internet site profitable? Ever wish you could read your customers' minds? Maybe you can.

For example, the analysis of just one Canadian site shows how the Internet is gaining popularity as a source of online information, and how buyers are increasing along the Web to shop for competing products. Looking at the on-line habits of visitors of the end-user-oriented *The Computer Paper* may provide you with some insights into the interests and behaviors of this buying group.

For some readers, the techniques used to gather this information will be applicable to your own on-line endeavors as you look to track usage on your own Web site. But the data itself reveals something of how people shop, and what they are interested in and are thinking about.

On-line usage logs for the site (<http://tcp.ca>), were provided by the ISP, and statistics were compiled during random periods since March. Those of you with advanced knowledge of spreadsheets or statistical analysis tools may have better methods than those that were used to analyze the data. But in anyway, simply examining the most popular items and figuring out the patterns of what displays long-

est "staying power" is easy enough to do with nothing more than a printer and a red pen. Excel 5.0's ability to import a spreadsheet "data" as an HTML table, made for easy distribution among company managers.

Of note, the site is taking 40,000 requests per day; but what does that mean?

A "request" basically means that a Web browser has requested access to a URL — be it a GIF or JPG picture, a Web page, or multi-or downloadable file. Thus, if your Web site say you have had 40,000 requests, and you have nine pictures on your Web page, you have had 4,444 actual visits to that page (nine pictures + one HTML page = 10 requests). Now also that this does not necessarily mean you have had 4,000 visitors. You could have had one visitor dropping by 4,000 times. Clicked pages and other issues come into play, lessening the impact of multiple visits by repeat customers.

The home page, for example, represents six or seven requests the first time it is accessed. Repeated returning to this page during a session produces no additional "hits."

The *Computer Paper's* pages tend to be economical in use of graphics, in order to keep download times to a minimum. The more

complex pages, for example, only account for five requests each. Accessing a single page with only one graphic makes only two requests. A typical article in any monthly issue on the site (including graphics and text) averages about six requests. Therefore, the standard rule of thumb—about a 10-to-1 requests-to-bits calculation, tends to be extremely pessimistic when calculating the number of visitors received at the site.

Also note that the "unique domains" would increment only once if 10,000 people from conservative.com all visited the site. Cashed pages similarly do not register in these numbers.

For the month of August, traffic on the site increased 20 per cent from earlier in the year, which is encouraging because that month is usually a slow time for computer use. Usage patterns had grown almost uniformly, in opposition to any suggestion that the interest is just a fad.

Interestingly, some of the most popular images on the Web site during that month were a series of pictures of a Pentium II motherboard. It appears that many people are interested in looking inside a Pentium II to see the improved board layout and new SBC connector.

We also found that "off-beat" pages with unusual content were extremely popular. For example, a page of Khalid Gibran prose, for example, was more popular than a roundup review of digital cameras or printers! Tellingly, the Gibran page

was not linked anywhere on the site—a simple proof that the large volume of "hits" were coming from search engines, not site browsing. We can only assume that the fact that Gibran's book, *The Prophet*, is a popular source of quotes to use in weddings may have boosted this page's popularity further during the April-to-June "wedding season."

Here's a disturbing trend: A picture on the Web site with the title "warsa.gif" was one of the most popular requests. "Warsa," of course is a term for pirated software. Presumably, the search engines were to blame. (The picture was unrelated to pirated software and was simply named inappropriately.)

Articles about the "Year 2000 problem" are attracting a growing number of visitors. Web authoring is a category was fairly hot, as were reviews of new hardware.

There is ample evidence to suggest that, at least on this site, highly focused "bits of links to related content" assignments are the most visited—especially when the frame remains visible on the left side of the screen. In other words, whether you like frames on Web pages or not, there is evidence that they keep people on your pages a lot longer.

Other topics and editorial areas that were especially hot in August included:

- Microsoft conspiracy theories,
- Pentium II,
- hard drive upgrades,

- other PC upgrades, especially NT and Windows 98,
- Macintosh, especially "The Future of C" clones and Mac OS 8 apps,
- 3D and VRML,
- Internet,
- gaming,
- digital map making (GIS), and,
- computers.

Digital cameras and ink-jet printers did not fare as well as we had imagined they might. But is Java popular? Not based on these stats the Java article link from the August issue scored only eight hits—a dud!

We've been impressed with a new Web statistics analysis program called Marketwave Hitlink. It extrapolates monthly data from shorter periods, displays relevant stats as bar charts, shows how many people read only one page (a worthwhile figure to ponder!), and so on. A trial version is freely downloadable from <http://www.marketwave.com/hit>. Obviously, the reading patterns of on-line visitors to any particular Web site doesn't tell the whole story. There is much to be said for asking visitors outright about how they feel about the service and products they obtain from you. Find out what products they are thinking of purchasing in the coming months, and what parts of your operation could be improved upon. People like to know you care about their opinion.

There are many ways you can improve customer feedback for your own business, but the Internet can play a role. In order to better serve your customers' needs, you have to gather intelligence. ☐

Graham Bennett is the Senior Editor of The Computer Paper and a former computer retailer. He can be reached at graham@cp.ca.

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Panasonic Digital Video Palmtop links to PCs

Panasonic has announced a lightweight digital videotape (DV Casette) palmtop that features an IEEE Standard 1394 digital interface, enabling high-resolution digital video and high-quality digital audio to be transferred between the palmtop and a suitably equipped PC or compatible video device.

The model PC DV710-R palmtop has a SRP of \$1,699.95. According to Barry Munn, marketing manager for Panasonic Video, "Panasonic was the first with a DV cassette recorder for the consumer market and now we're the first to offer models with full digital capture/output capability at an affordable price."

The better the quality of a video feed being sent to a digitizing device such as an MPEG-1 encoder and the better the quality of the resulting MPEG or AVI or QuickTime video file, which can be played over the Internet or recorded on a CD-ROM. Digital video footage can be dubbed to other digital tape systems or PCs, as a perfect clone of the original tape without the generational loss of analog video tape technology.

The price makes this product an affordable tool for both video professionals and serious amateurs, students, artists, and teachers. See <http://www.panasonic.com>



Photo: PC/DV710-R

NEC unveils Pentium II PC

(NB) — NEC Computer Systems, a division of Packard Bell NEC Inc., has introduced its first Pentium II-based Express5800 personal computer in the Canadian market.

The LE2300 was due to be available by the end of August, with a typical entry-level configuration priced at about \$4,300.

See <http://www.nec.com>

Toshiba's Tecra 750 CDT features 233MHz Pentium

On Sept. 8, Toshiba of Canada, Information Systems Group (ISG), introduced its top-of-the-line notebook, one of the first on the market to offer the new low-power-consumption version of the Intel Pentium 233MHz chip.

According to Robert Grossman, the vice-president and general manager of Toshiba of Canada ISG, the Tecra 750 CDT also features a 3D chipset and an integrated video camera.

Toshiba says the mobile version of the Intel 233MHz Pentium chip offers a 40 per cent increase in clock speed over the Intel Pentium 166MHz chip, while at the same time lowering CPU power consumption by 50 per cent. This lower system power overhead has enabled the inclusion of features such as video and 3D graphics without degrading battery life, according to Toshiba.

In order to further enhance performance, the Tecra 750CDT also incorporates Toshiba's new SuperSparc technology for faster bootup and shutdown, DMI 2.0 BIOS support, ACPI Version 1.0 support with PC97 compliance for full plug and play capability.



Photo: Toshiba of Canada

efficient power management, and longer battery life.

Other standard features of the 750CDT include 512KB of pipelined burst Level 2 cache, 32MB of EDO RAM (expandable to 166MB), optional PCI Versa 2.1 interface, a 13.3-inch, 24-bit active-matrix display with minimum 1,024 by 768 resolution, 4MB of video RAM, a 4.7GB removable hard drive, and an optional 4.7GB DVD-ROM drive (available in late 1997). Multimedia features include 16-bit duplex audio with support for 3D sound and WaveShare Synthesizer, built-in digital video conferencing including camera, and NTSC and composite video output to enable presentations via standard television monitors.

The Toshiba 750CDT weighs eight pounds including battery and optional CD-ROM drive. The base unit has a suggested list price of \$10,899, and comes with a three-year limited warranty on parts and labor.

For more information, contact <http://www.toshiba.ca>, or (905) 470-1433.

Xerox adds color to home, office multifunction markets

Xerox has introduced two multifunction devices — the Document WorkCentre 450, aimed at the small or home office (SRP \$799), and the Document HomeCentre (\$699) aimed at the family computing audience. Both new devices add color to the multifunction feature mix of filing, copying and scanning.

The Document WorkCentre 450, resembles its highly successful black-and-white predecessor, the WorkCentre 250, but offers color printer output, and incorporates true multitasking for increased throughput and productivity. It comes with PagePro and TextBridge Pro software to handle scanning, copying, faxing and Optical Character Recognition (OCR) tasks. Xerox claims that the WorkCentre is simple to install and use, aided by a quick installation routine and intuitive user controls on the device's front panel. The WorkCentre 450, comes with a one-year warranty and an overnight exchange policy.

The Document HomeCentre is ideally intended to be a child's play to use, with the aim of turning a home PC into a "color document workshop, enabling school-age children to enjoy producing high quality creative projects with their parents, while enabling adults to produce full color documents for work or play." According to Ron Pratt, vice-president and general manager of Xerox Canada's Channel Group, "People might be surprised to see Xerox developing products for home users, but we see this as a great opportunity to deliver our outstanding quality and leading-edge technology to market that deserves it."

The HomeCentre is a great way for parents and kids to be creative, have fun and get some high quality, professional-looking work done."

The Document HomeCentre comes with a separate hand-held color scanner that connects to the Document HomeCentre by a flexible cable. The Document HomeCentre also comes with a comprehensive suite of software, including Xerox PerfectFax software, a Topic Search Engine program, TextBridge Pro, Screen Print Assist Pro 4.0 (a consumer graphics and printing program) and PictureWorks PhotoEnhancer for image processing.

For more information, contact <http://www.xerox.com> or 1-800-633-6979. **BT**



Photo: Document HomeCentre

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Steve Jobs is interim Apple CEO

Apple says its new board of directors have "formalized" the role of Steve Jobs by naming him interim chief executive officer of the company until a new CEO is named.

The board has announced it expects a new CEO will be named before the end of the year.

Compaq adds partner manager

Compaq Canada Inc. has appointed Sue Good as strategic partner manager for the company.

The company says she will be responsible for identifying key industry partners and leveraging their capabilities. Good joined Compaq after 10 years in sales and technical marketing roles at Microsoft Data and Novell.

Canada Inc. Most recently, she was OEM manager at Novell.

CA gets lieutenant general

Computer Associates International Inc. has announced that retired Lieutenant-General Otto J. Gauthier has joined CA as director of strategic initiatives.

With more than 30 years' experience in government procurement, contracts administration and information systems management, CA says the general will play an important role in growing the company's federal business and supporting government clients.

His responsibilities will include establishing government contracts, management of strategic alliances, and the ongoing administration of ill-named procurement activities. He will be based at CA's Federal Division in Boston, Va.

Computer Associates International Inc. is headquartered in Ithaca, N.Y., and develops, licenses and supports more than 500 integrated products that include enterprise computing and information management, application development, manufacturing and financial applications.

SoftQuad has new managers

(NB) — Toronto's SoftQuad International

Inc. has appointed Richard Robins chief executive officer of the company.

Selwyn Robins has been appointed president.

Richard Robins has also been appointed to the company's board of directors. He previously served as executive vice president of SoftQuad. He co-founded Alpha Software Corporation in 1982 and was its Co-chairman until its acquisition by SoftQuad in December, 1996.

Selwyn Robins previously served as executive vice president of SoftQuad. He also co-founded Alpha Software Corp. At Alpha Software Robins has reportedly developed extensive expertise in product marketing, product development, and strategy. He was previously with Interactive Data/Chase Econometrics.

SoftQuad provides a broad range of multi-platform, standards-based software tools for creating and publishing information.

PSINet names senior VP

(NB) — PSINet Inc. has announced the promotion of Edward D. Postal from vice-president and chief financial officer to senior vice-president and CFO. Postal joined PSINet in 1996.

Prior to joining the Internet service provider, Postal was senior vice-president and chief financial officer of the Hunter Group, Inc., a high-growth privately-held consulting firm that provides on-site integration of computer software systems for a variety of applications. His responsibilities included finance, accounting, information technology, human resources and administration.

Sega gets PC games director

(NB) — Sega Entertainment Inc. has appointed Skip McForman director of sales for its PC games division.

McForman will be Sega's first sales director dedicated specifically to the PC games category, says the company. McForman most recently served as Sega of America's midwest regional sales director for home console video-game sales.

The company says it will ship 12 PC titles this year.

Apple VP resigns

Garrino De Luca, Apple Computer Inc.'s executive vice-president of marketing, has resigned from the company. De Luca was in that position since February 1997.

"This is a personal decision which does not reflect any assessment of the company's prospects," said De Luca in a statement. "We are seeing a lot of changes at Apple, and I'm confident that Apple will share again."

CALENDAR

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E-mail: ejournal@electronic.ca
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Oct. 28-30

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<http://www.ECgroup.com/Internet>

Nov. 5-6

e-Business World/Canada

Exhibit
Contact: Software Merchants Inc.
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<http://www.ebizworld.com>

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Toronto
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Nov. 12-16

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Exhibit
<http://www.ajmag.net/sbsi/bsi.html>

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Yee Hong Centre for Geriatric Care is a community-based organization of volunteers and staff providing a variety of services to meet the health and social needs of Canadian Chinese seniors.

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— ADRIAN LEE, CHAIRMAN

Dominant Players Are Now Emerging In Application Development Tools Market

By Leslie Arnold and Margery Lewis

Oracle, Sybase, Microsoft, Cognos and IBM are five of the most fierce competitors in the application development (AD) tools market. This industry maintains a wide spectrum of products targeted at software application developers. The AD tools family includes 3GL, object-oriented programming tools,

oriented technology has been met with resistance and has only recently begun to be accepted as a viable tool for increasing productivity.

Consumers are using more bought components, and there is an increase in the use of large-scale application sub-systems among those bought components. There is a requirement for more reuse and adaptation of existing code have increased the demand for object-oriented technology and off-the-shelf, pre-built solutions that can be customized.

The recent launch of Microsoft's Visual Studio 97 has signaled a major shift in the market, towards lower margins and bundled software. Small niche or single product focused vendors will find it increasingly difficult to compete successfully, and we expect to see substantial consolidation in this industry. A few large vendors that have a broad product base will emerge as dominant players.

Leslie Arnold and Margery Lewis are consultants at The Bonham Group Inc., in Ottawa — an international marketing and management consulting firm with a stated commitment to "Delivering Competitive Advantage to the IT Industry." Phone (613) 725-2855 ext. 215 or fax (613) 725-0118.

Desktop Scanners Move Towards Commodity

Canadian Scanner Market Share
 Hewlett-Packard — 34%
 Minolta — 13%
 Mita — 11%
 Logitech — 10%



Declining prices in scanners led to a rapidly expanded market in 1996, propelling growth to 75 per cent, says a report called *Scanner Market In Canada (1995-2000)*, produced by Evans Research Corp.

Moreover, dropping pricing will contribute to another 23 per cent growth in shipments this year. ERC predicted the market would grow another 22 per cent in 1998.

ERC suggested scanners may attain desktop "necessity" status, along the lines of printers or modems. The company predicted six per cent of PCs in use this year will have scanners attached.

The study cited other important growth factors in the market, including: declining PC memory prices; declining storage costs; better image manipulation; more advanced OCR software; and more intensive applications. **EV**
Evans Research Corp., in Etobicoke, Ontario, can be reached at (416) 671-8034.



scripting languages, DBMS tools, and application generators. In none a few of its members.

The AD tools market represents close to one third of the entire software market, with the applications they develop representing close to another third. System-level software captures the remaining portion of the market.

The AD tools industry has always been prolific producing increased productivity with each new generation of tools. Suffering from a legacy of failed expectations, the new object-

Reader Poll

Last issue, we asked:

What effect will the partnership with Microsoft have on Apple?

You said:

32% I'm optimistic that the financial input and technology partnership will help give stability to Apple and will lead to greater compatibility between the platforms.

36% This could be a pragmatic move for the companies, but while increasing the stability of Apple, the relationship with Microsoft may eventually make Apple less of a unique technological and culture entity in the market.

25% This is too little too late, for Apple. I doubt this will have any significant impact on Apple's downward market-share slide.

This issue:

Further on the Apple front, that company has indicated it is withdrawing from its flirtation with licensing out its operating system. Apple says it has no plans to license the MacOS 8 for the Common Hardware Reference Platform. Many industry pundits are questioning Apple's wisdom, at what appears to be the end of Apple's licensing experiment.

Our question to you:

Has Apple done the right thing for its business by deciding to not license the MacOS 8 to CHRP compliant clone makers?

☐ Yes ☐ No ☐ I don't know

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Heads/Disk	2/1	2/2	4/3	4/3	4/2
Track Density	4,132	5,521	4,080	4,080	3,000
Average Seek Time (ms)	10	10	12	12	11
Data Transfer Rate					
PIO Mode 6 (MB/sec)	16.6	16.6	16.6	16.6	16.6
Ultra DMA (MB/sec)					33.3
Buffer Size (KB)	128	128	128	128	128
Rotational Speed (RPM)	4,500	4,500	4,500	4,500	4,500
MTBF (hours)	300,000	300,000	300,000	300,000	300,000



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